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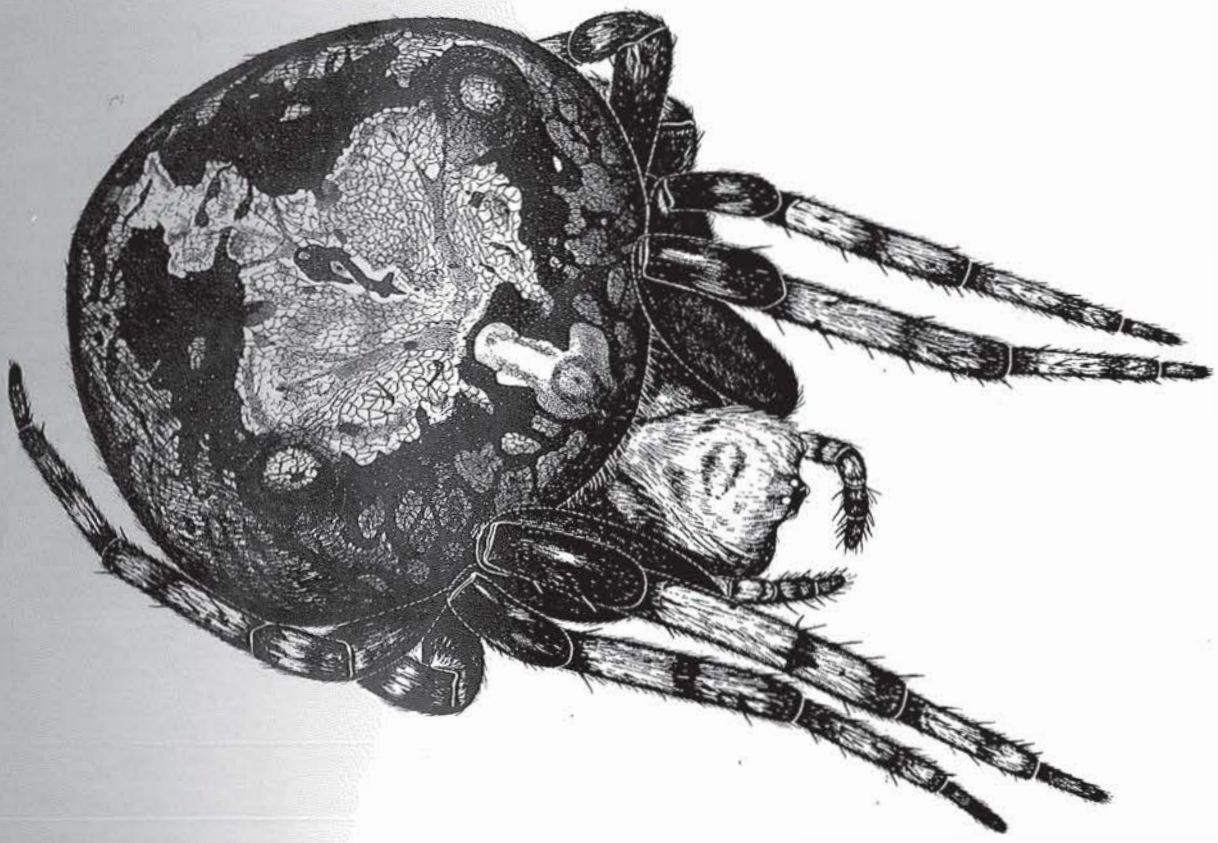
THE SPIDERS OF NEW ZEALAND

PART VI



by

R. R. FORSTER
A. F. MILLIDGE
D. J. COURT

The Spiders of New Zealand

Part VI

FAMILY CYATHOLIPIDAE

by R. R. Forster

FAMILY LINYPHIIDAE

by A. F. Millidge

FAMILY ARANEIDAE

by D. J. Court

R. R. Forster

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INTRODUCTION

The present volume covers three families, of which only one – the Cyatholipidae – is treated in full. The section on the Linyphiidae by A.F. Millidge does however complete the coverage of this family, supplementing the earlier paper by A.D. Blest (Spiders of New Zealand, 5:95-173) which dealt with the sub-family Mynogleninae. The section on the Araneinae by Court and Forster is restricted to the orbweb spiders which relate to *Araneus*. The remaining orbweb spiders belonging to the Araneidae will be covered in a subsequent volume. In dealing with the New Zealand representatives of the Cyatholipidae – a taxon which is now elevated to family rank – I have taken this opportunity to re-examine the species previously described from Australia and South Africa and to include descriptions for two new genera and species from Australia in addition to recording the New Zealand species. The present paper therefore brings together our current knowledge of this family and in doing so firmly establishes the characters on which the family is based.

ACKNOWLEDGEMENTS

As for the earlier parts of this series the authors are deeply indebted to the numerous individuals who have collected the material on which the papers are based and to the institutions which have loaned collections for study.

The work on this part by R.R. Forster and D.J.Court would not have been possible without the sustained support received from the Scientific Distribution Committee of the Golden Kiwi Lottery Board. Assistance in publication costs are also gratefully acknowledged from the De Beer Research Fund and the Fairweather Fund, both administered by the Otago Museum Trust Board.

Most of the illustrations have been prepared by the authors but the habitus drawings of a number of spiders were prepared by Barry. T. Weston from photographs of living spiders taken by R.R.F. We are greatly indebted to him for the meticulous accuracy incorporated in the presentation of these drawings. We would also like to express our appreciation for the extensive technical assistance given by Denise Hesson and to Ruth Newlove for her willing acceptance of the burden of typing the original manuscripts.

Throughout the listing of records the names of three collectors are listed by initials only. These are C.L.Wilton (C.L.W.), R.R.Forster (R.R.F.) and D.J.Court (D.J.C.).

Family CYATHOLIPIDAE

by R.R. Forster

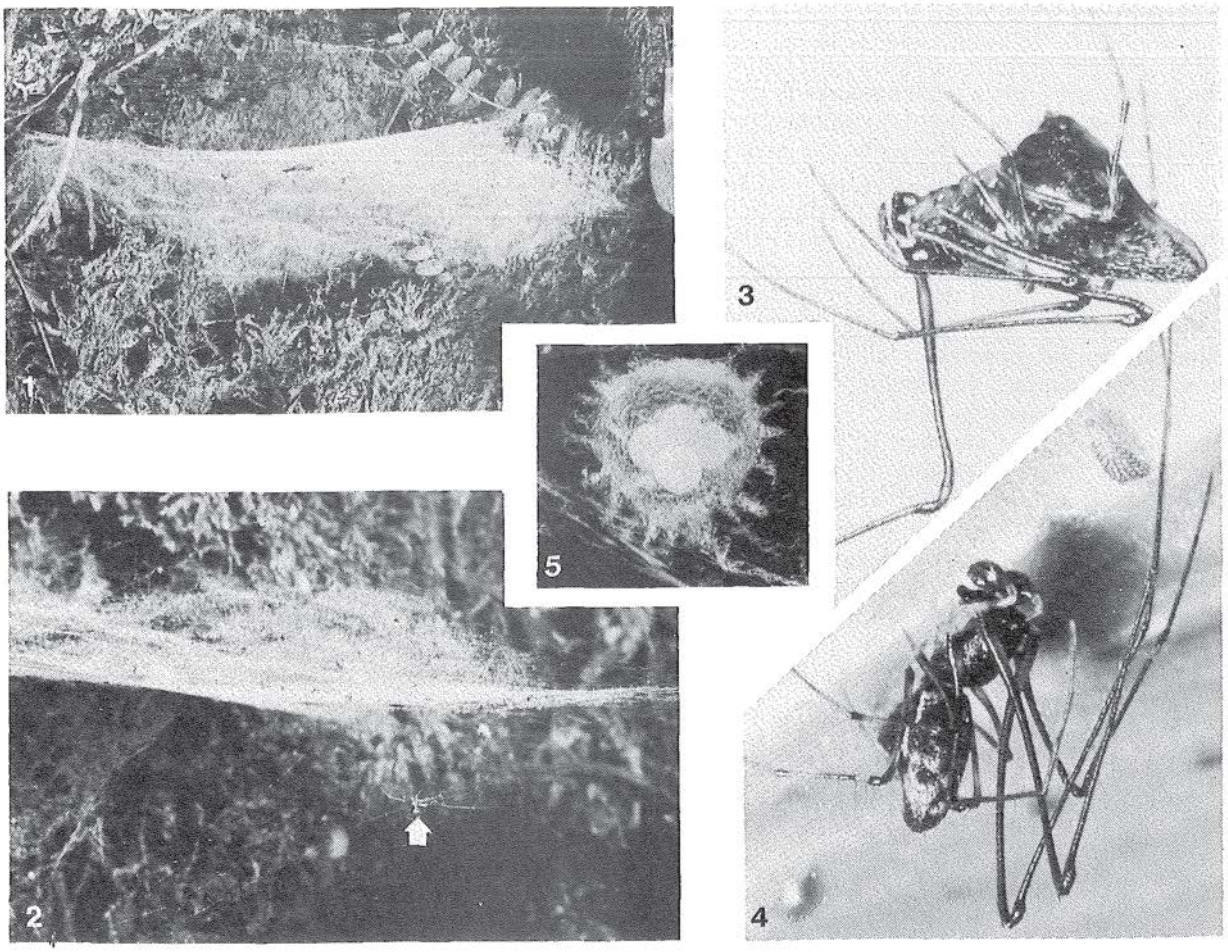
As with many other groups of southern hemisphere spiders the cyatholipids have had a checkered taxonomic history enhanced in this instance by the rareness of the spiders in collections and the widely separated records of the earlier described species; both in time and geographical location. While the relationship between the South African and Jamaican *Cyatholipus* and the New Zealand *Tekella* was pointed out by Bryant as long ago as 1933, the disjunct distribution has aroused little interest until recent years when further representatives of the family were recorded from Australia. The establishment of two new Australian genera in the same year (Wunderlich 1978, Davies 1978) suggested that these spiders were a widespread element in the Australian forest fauna (as they are in New Zealand), and subsequent collecting has confirmed this belief.

The extension of the family distribution to Jamaica as suggested by Simon (1894) with the inclusion of his species *C. dentipes* along with the two species of *Cyatholipus* he described from South Africa has been confirmed by Wunderlich (1978). The species does not however belong in the South African genus and a separate genus will eventually need to be established for it.

As discussed later the inclusion of these spiders with previously established families has raised problems which were recognised by Davies (1978) who erected a separate family (Teemenaaridae) for them. While agreeing with Davies that the spiders warrant separate family status, the name Cyatholipidae must be used in conformity with the original designation of the group name Cyatholipeae by Simon in 1894.

BIOLOGY

Field observations recorded for *Tekella, Tekelloides, Teemenaarus* and *Toddiana* show conformity in habitat preference and snare construction. All species both from New Zealand and Australia are restricted to a humid forest environment and construct their snares in shaded situations. The webs are generally found on treetrunks although some of the New Zealand species also favour steeply sloping banks. The web consists of a horizontal sheet of closely meshed fine silk which is guyed out from the substrate by lateral and ventral threads (Figs. 1, 2). Below the sheet there is a network of threads on which the spider clings upside down (Figs. 3, 4). The webs are often found together in large numbers and are then closely spaced. It was earlier suggested (Forster and Forster, 1974) that some species might be colonial or social in habit but subsequent observations place strong doubts on this statement. Even when the webs are in close proximity there is no direct communication between the individual webs and generally only a single spider is associated with each snare. The ori-



Figs. 1-5 *Tekelloides australis* n.sp. 1 Web from above showing sheet. 2 View looking at the margin of the sheet. Arrow indicates position of spider on the ventral threads. 3 Female. 4 Male. 5 Eggsac.

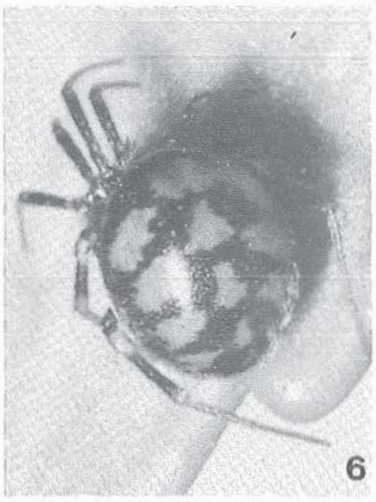
ginal assumption that some species of *Tekella* could be social arose from field observations where it was noted that a number of spiders were present on a single web. Following the study of the actual specimens collected it became evident however that along with typical *Tekella* a number of remarkably similar theridiids apparently living as symbionts or kleptoparasites on the web of some species of *Tekella* (Fig. 6) had been collected. Re-examination of earlier collections showed that in practically all of the instances where social behaviour had been recorded in the field notes most of the specimens collected were actually these theridiids. The spiders do not appear to have been described and the generic placement for them is uncertain. They are the same size as the host cyatholipids and are similarly patterned. Surprisingly the male chelicerae are divergent and stronger than the female chelicerae in much the same way as this occurs in *Tekella*. Furthermore, there are a number of species involved which although not yet worked up in detail, appear to follow the same pattern of speciation found in *Tekella*. As far as has been observed it appears that they do not construct secondary snares in association with the *Tekella* webs.

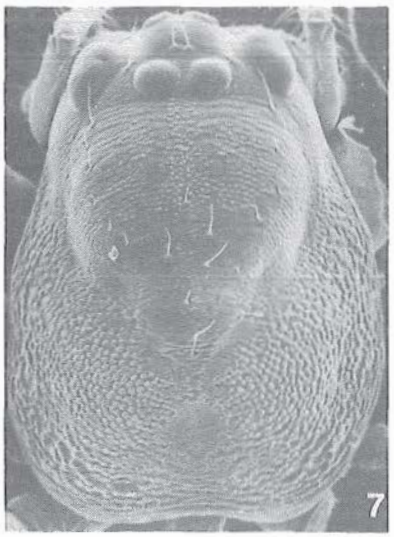
The eggsacs of *Tekelloides* have been observed. Up to three have been found associated with a single web, usually attached to the ventral threads close to the substrate. They are spherical, ornamented with small tubercles, and contain only a few eggs (from four to six) (Fig. 5). The cocoon is loosely woven from coarse, crinkled silk and the eggs can be seen through the silk cover.

It is unlikely that the habits of the South African cyatholipids will differ greatly from the typical Australian and New Zealand species but it is possible that the Australian *Matilda* will prove to have a different ethology. While these spiders appear to be limited to rain forest they have only been collected by sifting or Berlese extraction from forest floor litter. Bearing in mind the small size of these spiders construction of an effective sheetweb in the litter is feasible but the relative stoutness of the legs and reduction in the length of the anterior pair suggests divergence from the typical cyatholipid snare.

TAXONOMIC HISTORY

The first known cyatholipid was the species recorded by Urquhart in 1869 from the North Island of New Zealand as *Linyphia nemoralis*. Some time





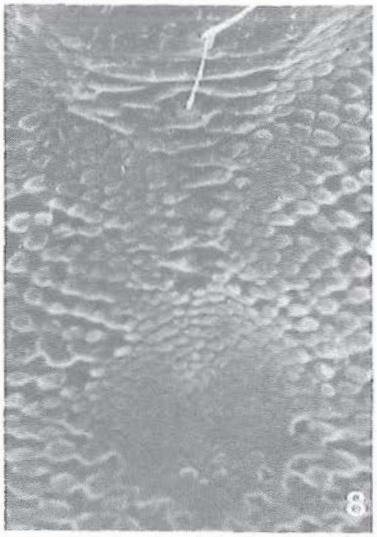


Fig. 6 Theridiid from web of *Tekella absidata* (Urquhart). Figs. 7-8. *Tekella lineata* n.sp. 7 Carapace of female. 8 Enlargement of foveal region.

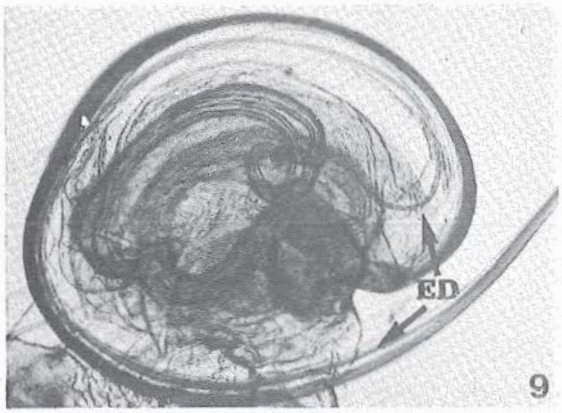
later Urquhart ((1894)) described a further species from the South Island (*absidata*) for which he established the genus *Tekella*. This spider he also placed in the Linyphiidae but apparently did not associate it with the species he had described earlier in *Linyphia*.

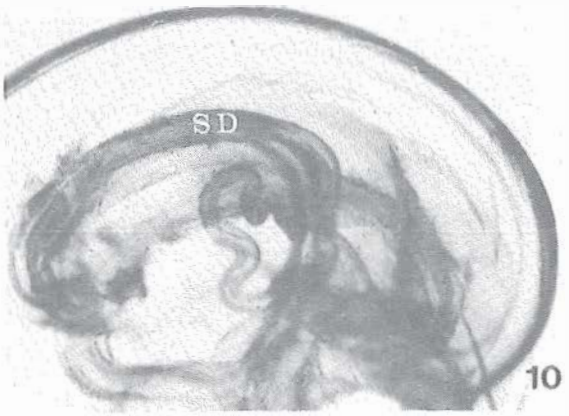
In the same year Simon (1894) described three species in his Histoire Naturelle, two from South Africa and one from Jamaica all of which he placed in a new genus *Cyatholipus*. Simon placed his genus in the Tetragnathinae and at the same time established the group name Cyatholipeae which forms the basis for the family name now accepted.

Petrunkevitch (1930) established a new genus *Cyatholipulus* for a six-eyed spider (*C. luteus*) from Puerto Rico which he placed in the Theridiosomatinae. This species was described from a single female specimen which on the basis of his description and figures shows no relationship at all with *Cyatholipus* and could in fact be a true theridiosomatid.

Bryant (1933) during her revision of the Urquhart type material recognised the relationship between *Linyphia nemoralis* and *Tekella absidata* but mistakenly synonymised the two species under the name *Tekella nemoralis* (Urquhart). Bryant also noted the close relationship of *Tekella* and *Cyatholipus* and, probably following Petrunkevitch, placed the genera in the Theridiosomatinae.

No further comment based on the direct examination of specimens seems to have been made until Wunderlich (1978) described a species he had collected from New South Wales, Australia as *Tekellatus lamingtonensis* n. gen., n. sp. In this paper he compared his species with *Tekella absidata* Urquhart (under the name *T. nemoralis*) from New Zealand and *Cyatholipus dentipes* from Jamaica, firmly establishing the relationship of these three genera. He raised Simon's group name to subfamily status (Cyatholipinae) and following Simon placed the subfamily in the Tetragnathidae but at





Figs. 9-10 *Tekelloides australis* n.sp. Male palp cleared to show sperm duct (arrows). 10 Enlargement of base of embolus showing coiled sperm duct.

the same time expressed doubts on this relationship.

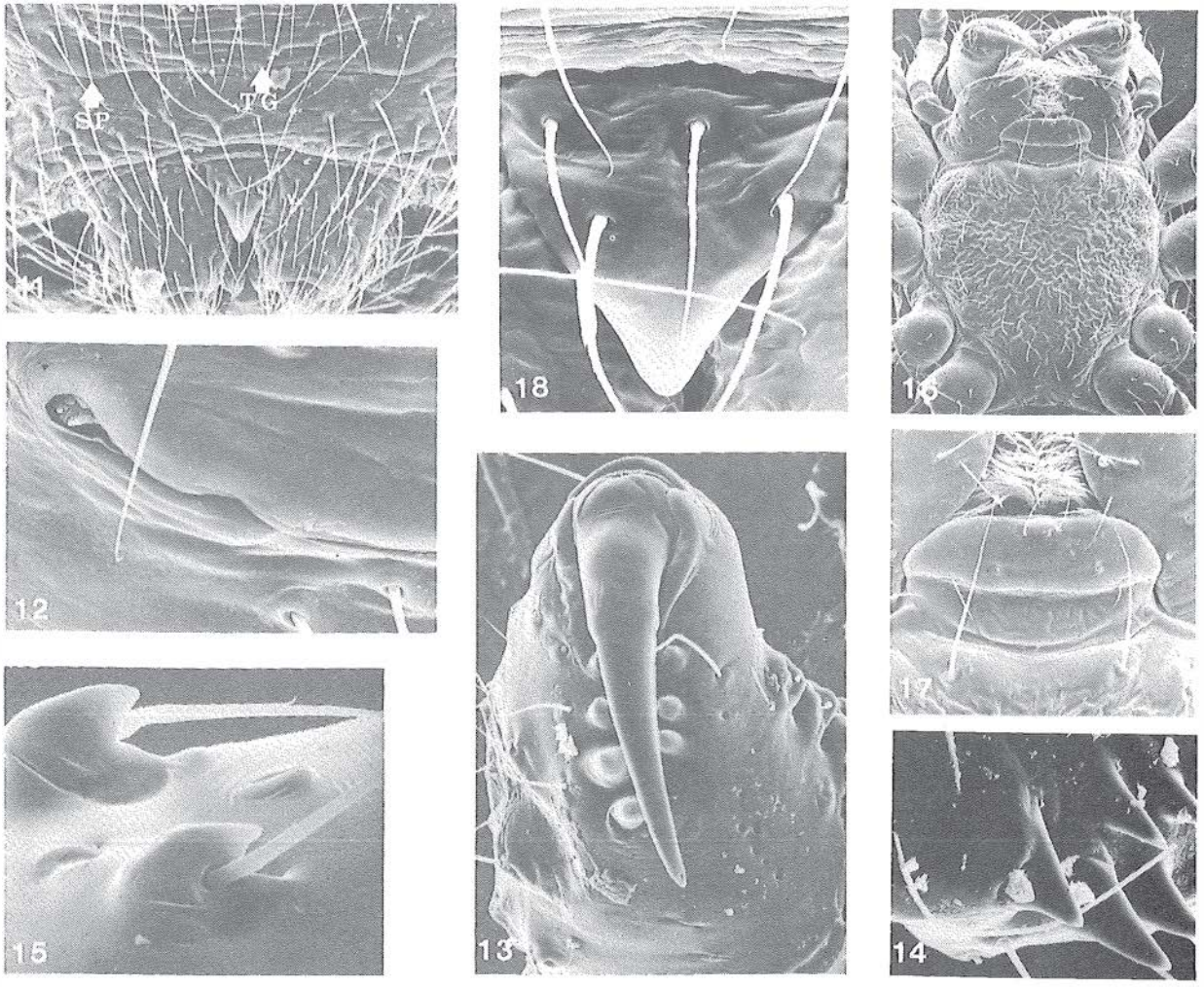
In the same year Davies (1978) published her paper presented earlier to the VII Arachnological Conference in which she described *Teemenaarus silvestris* n. gen., n.sp. from eastern Queensland, Australia. Davies noted the relationship of this genus with both *Tekella* and *Cyatholipus* and also described the unusual tracheal system. While concluding that the group was part of the araneoid series of families she considered that the spiders warranted separate family status and established a new family Teemenaaridae for them.

The present paper confirms Davies' conclusions regarding the status of the group but changes the family name to Cyatholipidae in agreement with the earlier established subfamilial taxon.

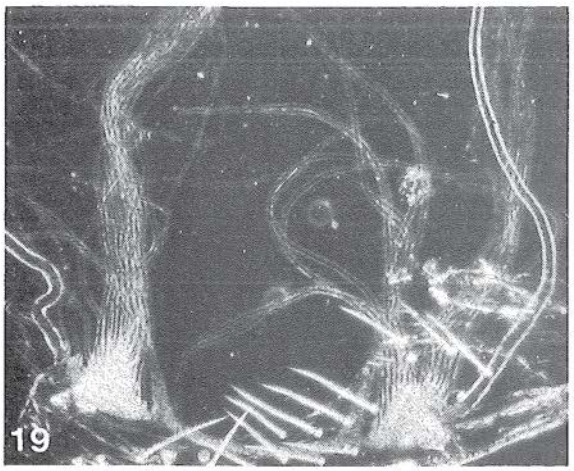
Family **CYATHOLIPIDAE** Simon, 1894

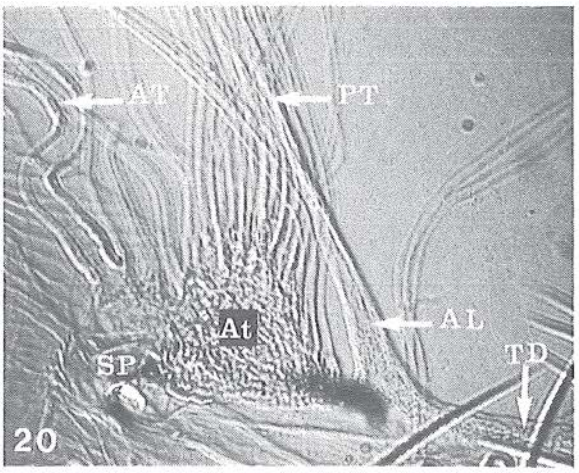
Cyatholipinae Simon 1894, Histoire Naturelle des Araignées. 1(3):711. Theridiosomatinae (in part). Petrunkevitch 1928, Connect.Acad.Art Sc. 29:144. Bryant 1933, Rec.Cant.Mus. 4:19. Cyatholipinae Wunderlich, 1978, Zool.Beitr. 24(1):33. Teemenaaridae Davies, 1978, Sympos.Zool.Soc. London 42:293.

Ecribellate and entelegyne spiders which construct a sheetweb. Respiratory system with an anterior pair of booklungs and a posterior tracheal system. The booklungs are normal with the atria connected by a transverse duct. The lamellae are numerous and of normal structure. The posterior respiratory system is characterised externally by a pair of widely spaced spiracles connected by a transverse groove placed well in advance of the spinnerets (Figs. 11, 12). Each spiracle leads into a large atrium from which numerous tracheal tubes serve both the abdomen and the prosoma (Fig.19). There are two distinct forms of tracheae. At the outer margin of each atrium there is a relatively large tube which appears to be limited to the abdomen, while across the anterior margin of the atrium a large number of more slender tubes pass directly forward and pass in through the petiolus into the prosoma (Fig. 20). Some of these tubes may be weakly divaricate but most are single. The atria are linked by a hollow transverse duct which lies beneath the external groove



Figs. 11-18 Structures of *Tekella absidata* (Urquhart) 11 Posterior portion of abdomen showing spiracle (SP.), transverse groove (TG) linking the spiracles and the linguiform colulus. 12 Spiracle. 13 Chelicera. 14 Cheliceral teeth. 15 Cheliceral hairs. 16 Ventral surface of prosoma. 17 Rebordered labium. 18 Spiracle.





Figs. 19-20 *Tekella absidata* (Urquhart) Tracheal system. Spiracle (SP), atrium (At), atrial trachea (AT), pulmonary trachea (PT), apodemal lobe (AL), transverse duct (TD).

but does not appear to be directly associated. An elongate triangular hollow apodemal lobe extends forward from the transverse duct immediately in front of each atrium.

The bulb of the male palp is relatively large, flattened ventrally where the tegulum is generally encircled by a slender embolus (Fig. 60). The embolus may have parembolic processes of various forms (Figs. 61, 62) but in a number of species is entire. No true conductor present. There is a second tegular process which may take the form of a T-shaped structure or be progressively reduced to a shallow ridge. Cymbium spoon-shaped with a prominent retrolateral notch (Fig. 65) No paracymbium. The segments of the palp are without processes. The female palp is normal but the claw is reduced to a minute denticle (Figs. 30, 31). Chelicerae (Figs. 13, 14). Male chelicera usually stronger and divergent distally. Maxillary lobes longer than wide and distinctly convergent but not meeting beyond the labium. Labium approximately as wide as long and strongly rebordered (Fig. 17). Sternum scutiform, as long as wide and broadly obtuse posteriorly (Fig. 16). Carapace heavily sclerotised. Head region raised but not strongly; fovea absent or in the form of a shallow depression. Thoracic region often rugose or granulate (Figs. 7, 8). Eight eyes in two rows. Lateral eyes contiguous and widely separated from the median eyes. Clypeus wide. Abdomen ovoid, spherical or raised dorsally to a point (Figs. 36, 37). Cuticle generally thin but sometimes with the epigastric region sclerotised and a sclerotic ring encircling the spinnerets. The pedicel generally present as a heavily sclerotised tube. *Matilda* has dorsal and ventral scutes Fig. 108). Six spinnerets in a compact group. Colulus always well developed; triangular with a few long hairs (Fig. 18). Epigynum distinct, often with a median lobe. Internal genitalia with a pair of thickly sclerotised spherical receptacula in association with a membraneous portion which may take the form of a wide convoluted tube or be reduced to a simple lobe.

Epiandrous glands present immediately in front of the anterior margin of the epigastrium in the male (Figs. 32-35). Legs slender and in most genera very slender; without spines but with a single dorsal bristle on the patella and two on the tibia. Hairs smooth or weakly barbed. Trichobothria present on the tibia and metatarsus. Bothria with the posterior hood reduced to two small ridges or absent (Figs. 24-26). Tarsal organ domed with a small apical aperture (Figs. 27-29). Three claws, slender with a single row of teeth on the ventral surface of the paired claws and a single tooth on the ventral claw (Fig. 21). At least some species with "false claws" below the true claws (Fig. 22, 23).

Type genus: Cyatholipus Simon 1894

Included Genera: *Cyatholipus* Simon, *Tekella* Urquhart, *Tekelloides* n. gen. *Hanea* n. gen *Tekellatus* Wunderlich *Teemenaarus* Davies, *Toddiana* n. gen. *Matilda* n. gen.

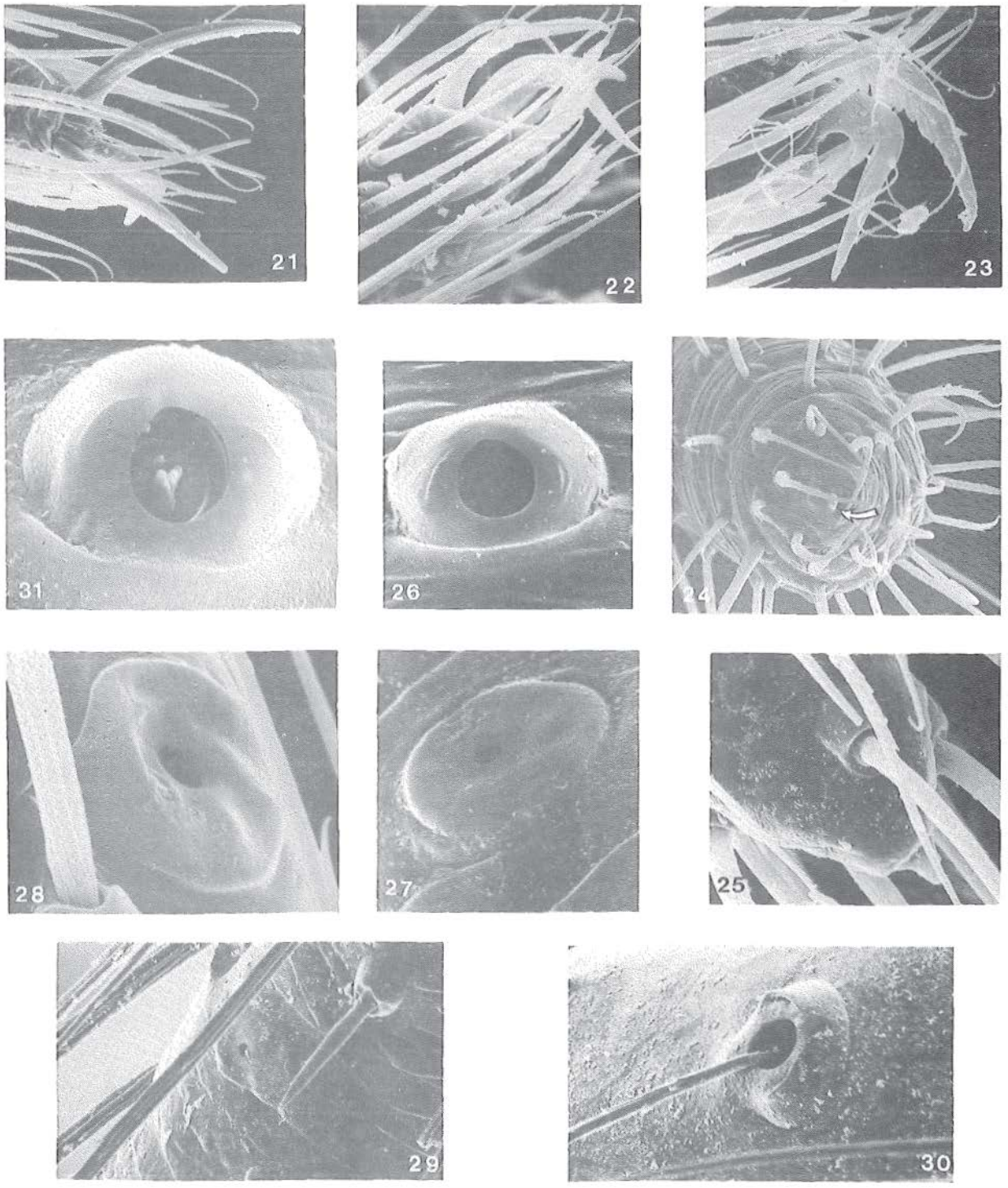
Distribution: South Africa, Australia, New Zealand, Jamaica.

The structural characters of the cyatholipids are remarkably stable even including the atypical genus *Matilda* which at first glance appears to be an anapid rather than a cyatholipid. Perhaps the most interesting expression of this constancy is found in the tracheal organisation. All of the genera except for *Tekellatus* have now been examined for this structure and the same features are found in all of them. The anterior booklungs show no special characteristics other than the fact that along with many other families the atria are linked by a transverse duct.

The tracheal system remains bispiraculate with the spiracles widely spaced and situated clearly in advance of the spinnerets. The atria are large and give rise to many tracheal tubes of which the outer one is markedly stouter. It is probable that this tube has been derived from the outer extension of the atrium while the numerous more slender tubes have been derived from the original booklung lamellae.

It also appears that the outer tube is limited to the abdomen while most of the slender ones, if not all, pass through the petiolus to the prosoma. Some of these tubes extend into the appendages as they do in most spiders with prosomal tracheation. The conclusion that these prosomal tracheal tubes have not been derived, as in some other spiders, from the apodemal element is easily reached in this instance. The apodemal lobes remain in their original form in association with the transverse duct linking the atria in the same way as these are found in the hypochilomorph spiders. Even if the apodemal lobes had been lost in the cyatholipids however the presence of paired spiracles would have suggested that direct lamellate transformation was involved.

The carapace is generally squat, rather broad anteriorly and the thoracic region is mostly rugose or granulate. The head region is always distinct, rising above the fovea to the highest point before sloping gently down to the eyes. The fovea is represented by an oval depression or virtually

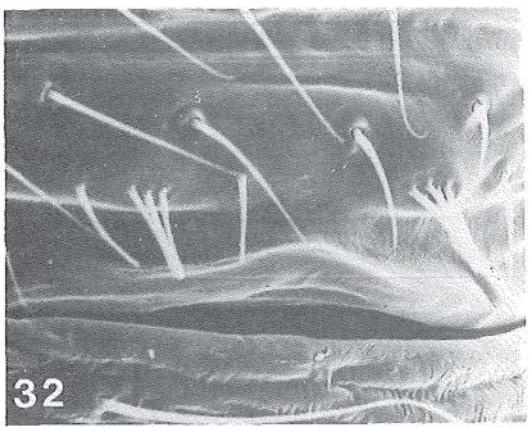


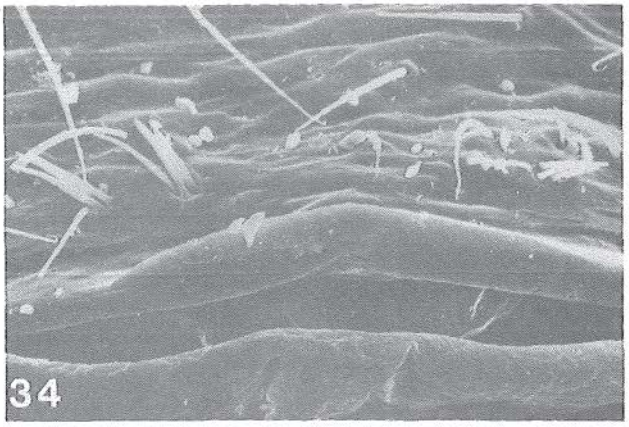
Figs. 21-26 *Tekella absidata* (Urquhart). 21 Claws, leg I. 22 Claws, leg IV with false claws. 23 Leg IV showing inferior claw. 24,25 Distal portion female palp showing reduced claw (arrow). 26 Bothrium.

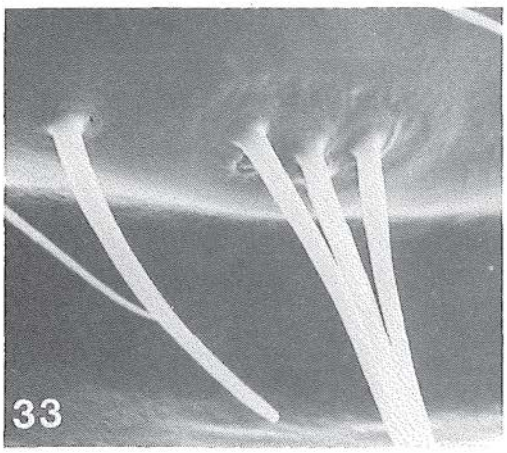
Fig. 27 *Toddiana daviesae* n.sp. Tarsal organ. Fig. 28 *Tekelloides australis* n.sp. tarsal organ. Figs. 29-30 *Teemenaarus sylvestris* Davies. 29 Tarsal organ. 30 Trichobothrium. Fig. 31 *Cyatholipus quadrimacula* Simon, bothrium

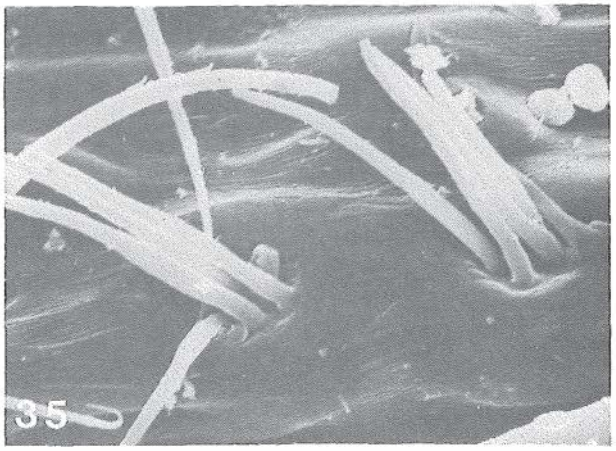
absent but never in the form of a distinct slit. The eyes are in two more or less straight rows with the lateral eyes contiguous and clearly separated from the median eyes. The median eyes are distinctly separated. Homann (in litt.) after a preliminary examination of the eyes of *Tekella* reports that the retina of the indirect eyes appears to be of the "primitive" form. The clypeus is vertical and relatively high being at least twice the diameter of an AME.

The sternum is scutiform as in most araneoids but the posterior margin is broadly obtuse in all genera so that the fourth pair of coxae are widely separated.









Figs. 32-35 Epiandrous glands. 32-33 *Tekella absidata* (Urquhart) 34-35 *Tekelloides flavonotatus* (Urquhart)

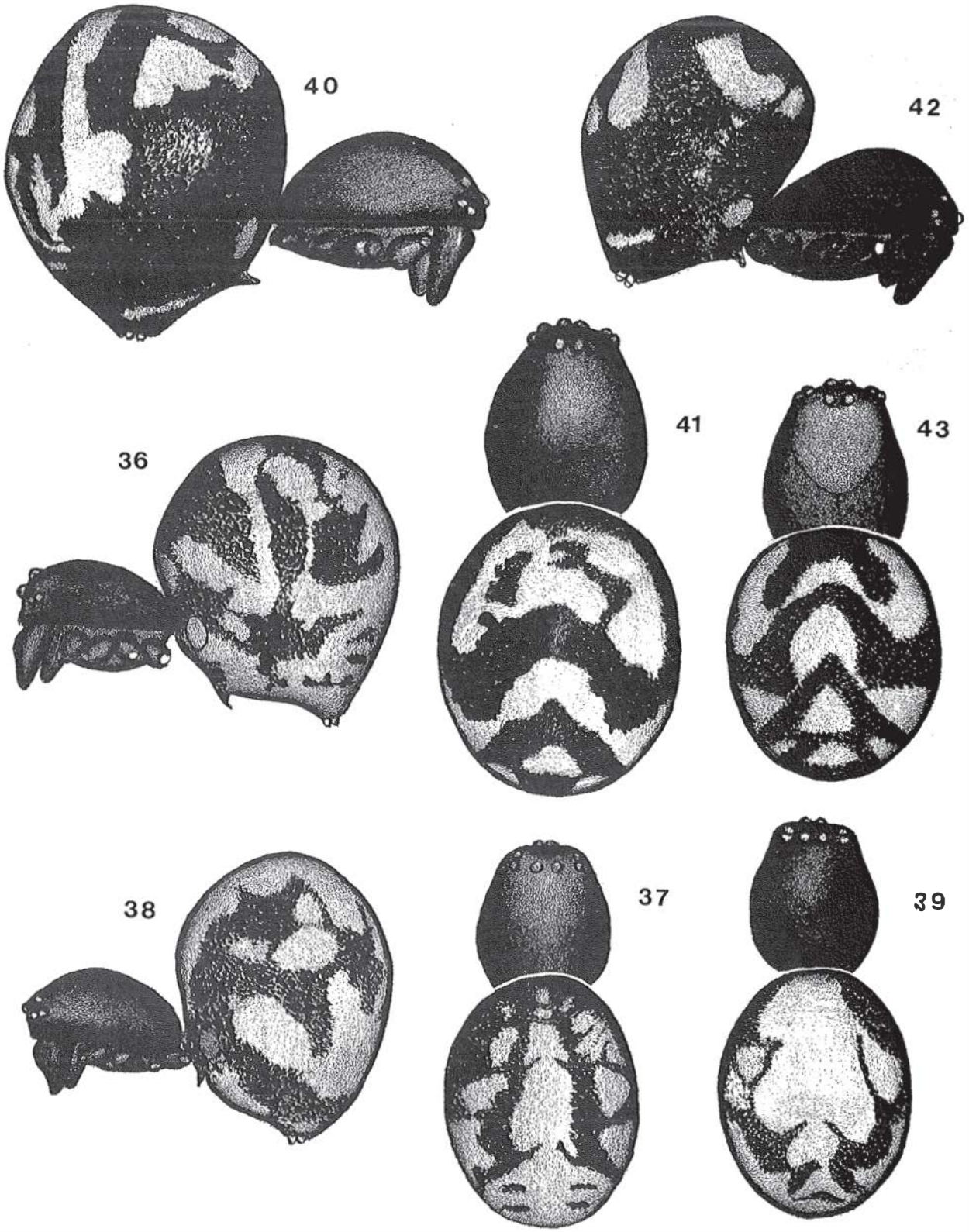
The chelicerae are relatively short but stout and are directed down vertically from the margin of the carapace. The teeth are strongly developed but there are no denticulations along the chelicereal groove as found in many araneids, uloborids, theridiosomatids and mysmenids. The poison gland is large and extends into the prosoma.

While the abdomen is usually oval or subspherical in two genera; the dorsal surface is extended to a point giving the abdomen a triangular shape in side view. Where this form of abdomen occurs it is invariably distinctly more slender in the male. There are six well developed spinnerets in a compact group and the colulus in all genera is similar. This is triangular, strongly sclerotised and provided with only a few long hairs. The cuticle surrounding the spinnerets is sclerotised in some species as is the epigastric region. Generally the thickening of the epigastric cuticle where it occurs continues to encompass the petiolus and extends dorsally but not to form a dorsal scute. In only one genus (*Matilda*) is a separate dorsal scute present.

The epigynum is always distinct but not strongly developed. A median lobe is generally present. The internal genitalia have a single pair of spherical thickwalled receptacula which are associated with a membraneous portion which in most species consists of a wide convoluted blind duct. It seems that the genitalia have been derived as in most of the araneoids from trirecceptaculate genitalia by subdivision of the median membraneous receptaculum.

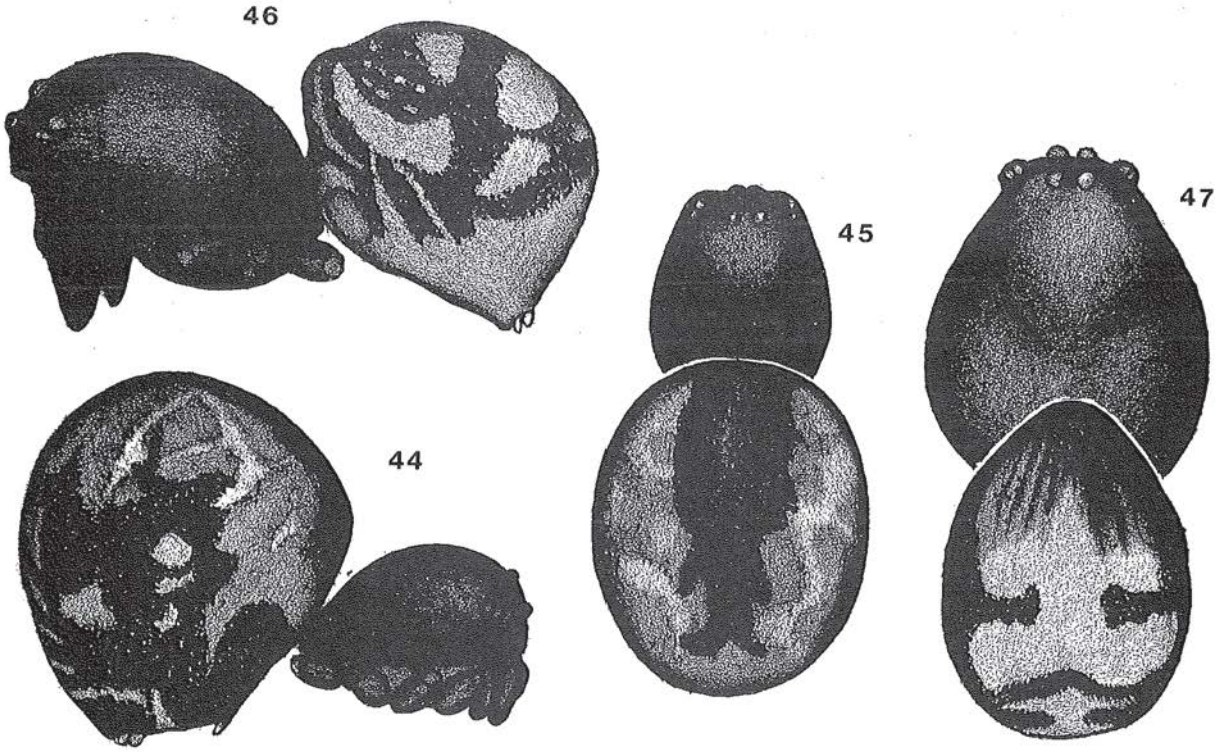
The male palp although readily separable at both generic and specific level is conservative in its form. The segments lack any apophyses and the cymbium although bearing a deep notch on the retrolateral margin does not bear true paracymbial processes. The cymbium is spoon-shaped with a conspicuously large bulb which in many species extends out beyond the margins. The ventral surface of the bulb is usually flattened with a slender spiniform embolus coiled around the margin. In some genera the embolus is provided with parembolic processes extending from the subdistal region. There is a second T-shaped apophysis in *Tekella* and *Tekelloides* which is probably the median apophysis. There is a tendency for this structure to be reduced or absent in other genera. There is no indication of a primary conductor in any of the genera. The ejaculatory duct is very slender and extends into the bulb some distance before expanding into the spermatophore. The spermatophore is tubular and coiled (Figs. 9,10).

The legs in all genera except *Matilda* are markedly long and slender with the anterior pair of legs extremely so. It seems probable that the



Figs. 36-43 Dorsal and lateral views of body of *Tekella* sp. (females). 36,37 *Tekella absidata* (Urquhart). 38,39 *Tekella nemoralis* (Urquhart). 40,41 *Tekella uniseta* n.sp. 43 *Tekella biseta* n.sp.

form of the legs bears some relationship with the web habits and that *Matilda* may therefore have a somewhat different ethology. The complete absence of spines (macrosetae) is of interest as this is a derived character within the Araneoidea but coupled with this is the retention in at least some of the genera of the strong serrated bristles below the claws usually called false claws. There are no comb bristles on the fourth tarsus as in the theridiids. The trichobothria are restricted to the



Figs. 44-47 Dorsal and lateral views of body. 44,45 *Tekella lineata* n.sp. female. 46,47 *Hanea paturau* n.sp. Male.

tibiae and metatarsi with a subdistal one on each metatarsus. The bothria have the posterior hood reduced as in most araneoids. The tarsal organ is a simple domed structure which in some genera (e.g. *Tekella*, *Teemenaarus*) have the same low, rather irregular form found in many arancids but in other genera the dome is evenly rounded (*Matilda*,*Cyatholipus*). Three long and slender claws are present in all genera.

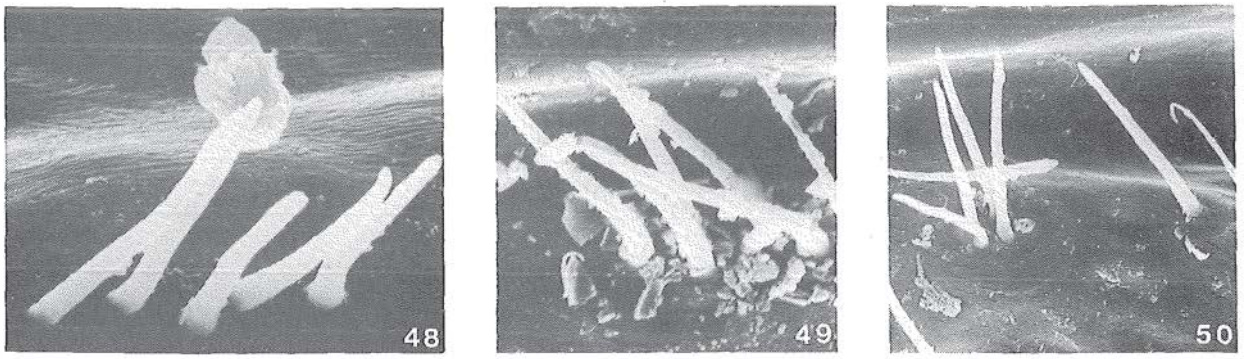
The palp of the female is normal in length but the claw is reduced to a minute denticle as in the Erigonidae.

The Relationship of the Cyatholipidae

There can be little doubt that the family should be associated with the families presently grouped in the superfamily Araneoidea. At one time or another cyatholipids have been included in the Linyphiidae (Urquhart, 1889, 1894), Theridiidae (Roewer 1942), Parrott 1946, Bonnet 1959), Theridiosomatidae (Petrunkevitch 1930, Roewer 1942), Argiopidae (Bonnet 1956) and the Tetragnathidae (Simon 1894, Wunderlich 1978). Davies (1978) established a separate family for the group (Tecmenaaridae) which she considered should be placed in association with the Araneidae, Linyphiidae, Theridiidae, Symphytognathidae complex of spiders. While this general association of the taxon at the family level (which now bears the name Cyatholipidae based on the original group name Cyatholipeae erected by Simon in 1894) may be readily accepted, the nomination of a possible sister group within the superfamily is more difficult. The inter-relationships of the families incorporated in the Arancoidea are anyway difficult to interpret and the inclusion of the Cyatholipidae does not throw much further light on the problems involved.

The bulk of the characters which in summation characterise the cyatholipidae are found in much the same state in a number of other arancoid families. The smooth or weakly barbed hairs, the reduction of the posterior hood of the bothrium and the small aperture of the domed tarsal organ are all derived characters which have developed apparently in parallel in many of the families. The three uniserrate tarsal claws are common to all araneoids while the presence of "false claws" in some of the cyatholipids is in all probability a plesiomorphic character for the superfamily secondarily lost in most of the families. The compact grouping of the six spinnerets and the presence of a well defined triangular colulus is also widely represented. The eyegrouping is similar to that commonly found in many araneid families. The tendency for the contiguous lateral eyes to be set on a definite tubercle is also a common feature. However at least in *Tekella* (Homann, pers. comm.) the retina of the indirect eyes are of the "primitive" type, otherwise only found in the Uloboridae.

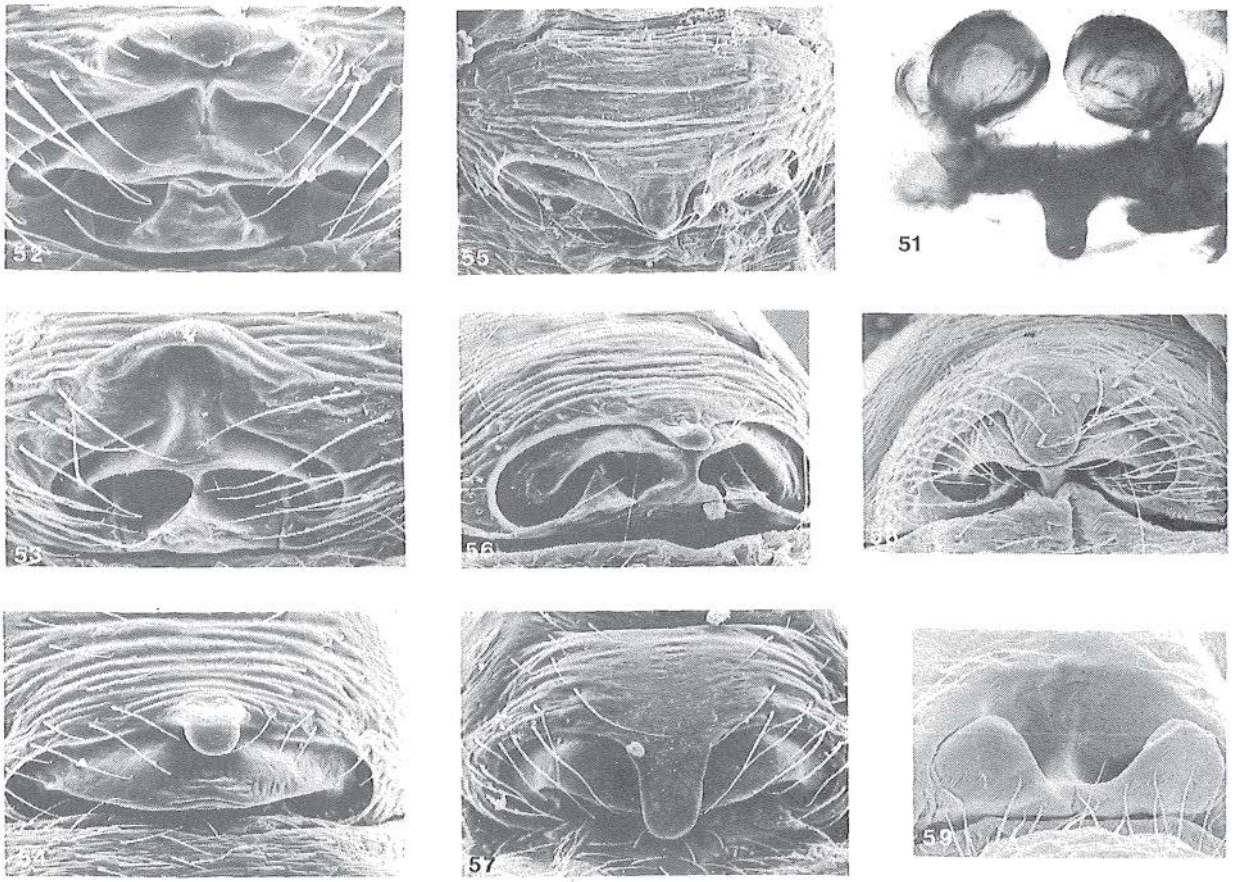
The chelicerae have retained strong teeth on both margins but no denticulations are present on the groove between the rows as is found in many arancids, uloborids, theridiosomatids and mysmenids. It is however possible that these denticles are homologous with the similar structure present in some hypochiloids and so



Figs. 48-50 Epiandrous glands. 48 *Tekella nemoralis* Urquhart. 49. *Tekella lineata* n.sp. 50 *Tekella uniseta* n.sp.

represent a plesiomorphic character for the arancoids.

The male palp is however distinctive to the family. The segments lack any secondary processes and the cymbium while notched on the retrolateral margin as in some theridiids lacks a paracymbial process. The spoonshaped cymbium is characteristic as is the large ventrally flattened bulb. The tegular apophyses are few. The primitive state, judging from the known species, consists of only two apophyses; the embolus and a medial structure which is probably homologous with the median apophysis of other spiders. No conductor is present although in some species the median apophysis is reduced to a shallow ridge which then functions as a secondary conductor. The presence of striking parembolic processes in some species is of interest but it is not possible to decide whether these structures are plesiomorphic for the family or are secondary developments. The internal genitalia of the female follow the typical araneoid pattern and it is presumed that the structures developed from a trireceptaculate organ. In the Cyatholipidae the original median membraneous receptaculum is represented in most species by a pair of capacious membraneous



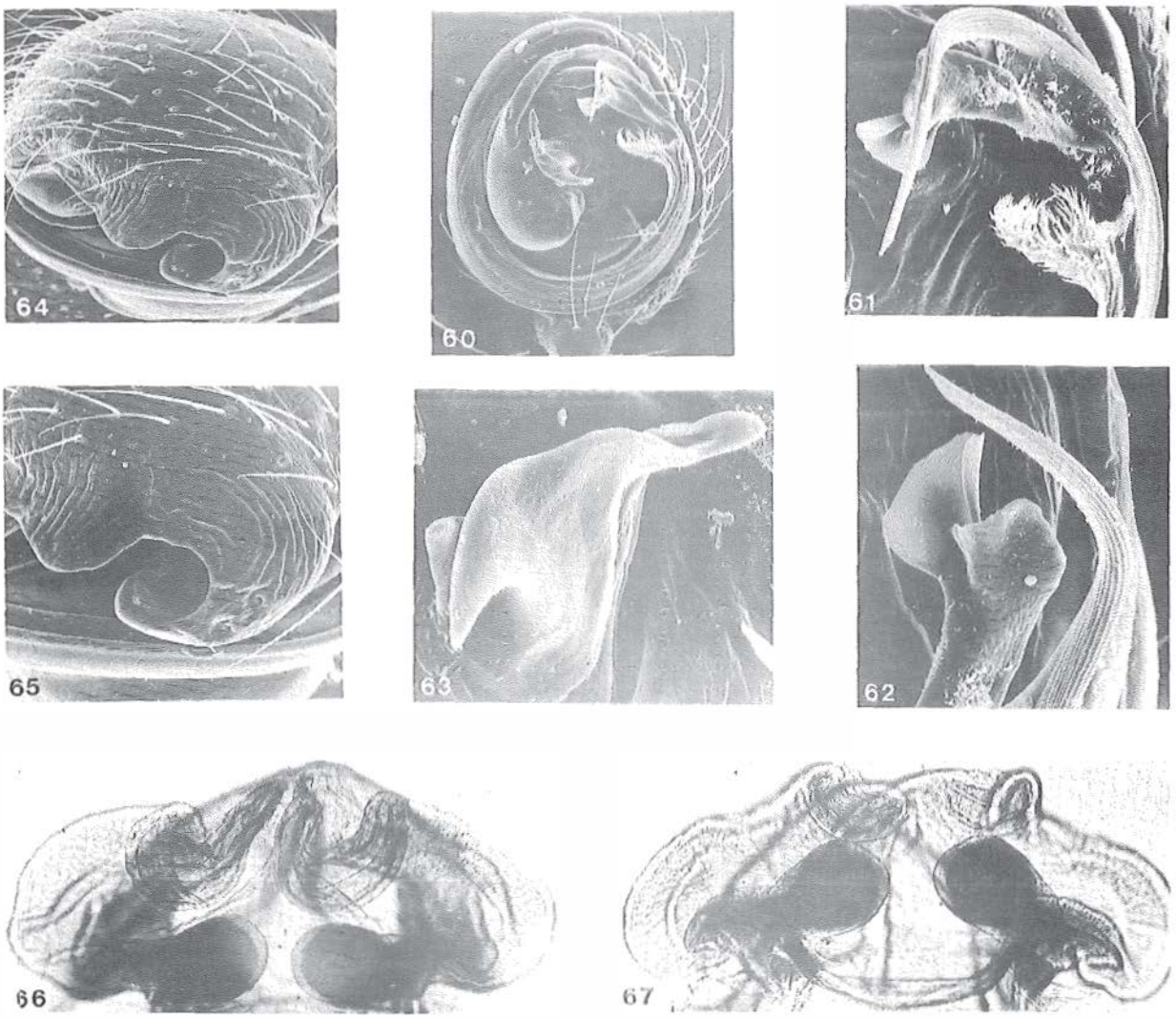
Figs. 51-59 Female genitalia. 51 Internal genitalia *Cyatholipus quadrimacula* Simon. 52 *Tekella uniseta* n.sp. 53 *Tekella biseta* n.sp. 54 *Tekella nemoralis* Urquhart. 55,56 *Tekelloides flavonotatus* (Urquhart) 57 *Tekella lineata* n.sp. 58 *Tekella absidata* (Urquhart). 59 *Toddia daviesae* n.sp.

blind ducts but in some species these ducts have been greatly reduced and it is probable that eventually species will be found with simple bireceptaculate organs similar to those found in many aranеids.

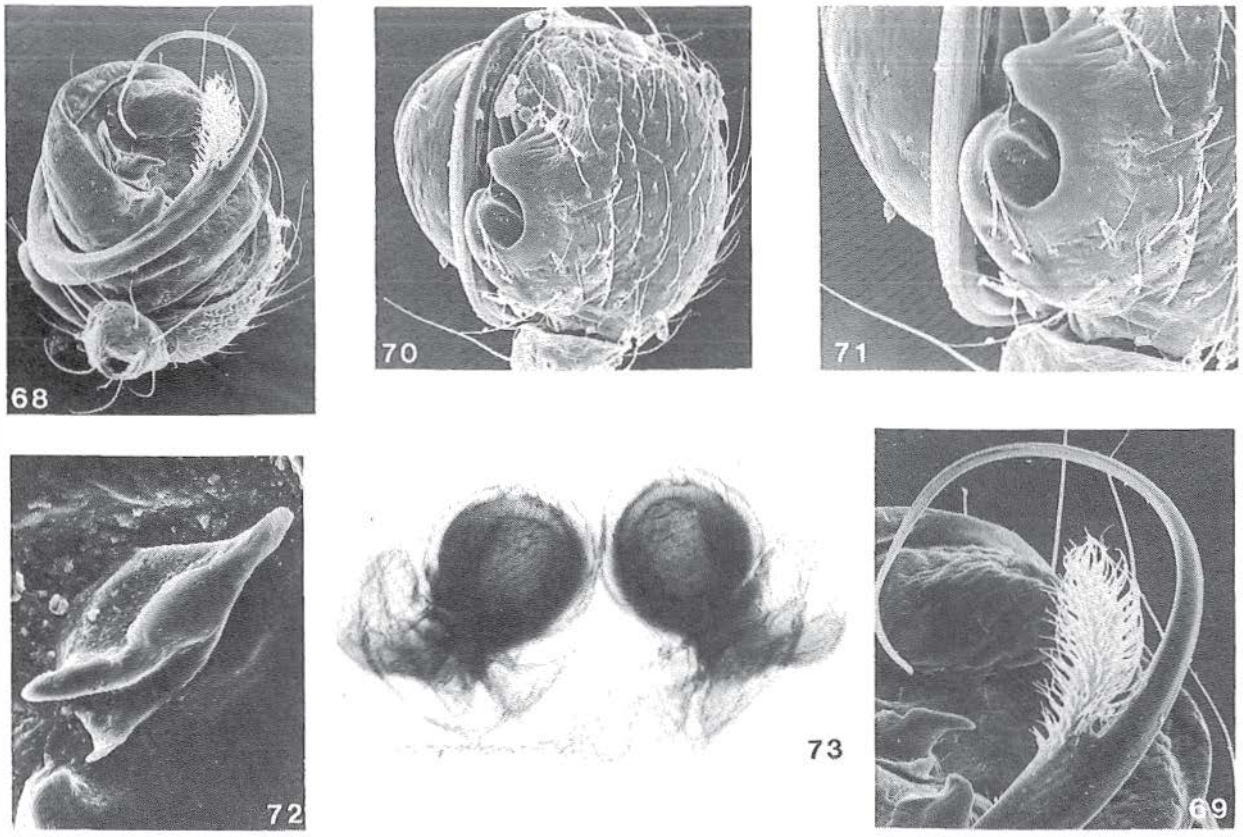
The most striking characteristic of the cyatholipids is the form of the tracheal system. The stability of the tracheal organisation is remarkable having in mind the somatic differences between the Australian *Matilda* and the other genera. The configuration must have developed early in the transformation from booklung to tracheal respiration and probably by achieving prosomal penetration at an early stage became fixed and not subject to any further gross modification.

The origin of the tracheal elements can be more confidently interpreted in the cyatholipids than in many other families because the apodemal structures are retained in the original plesiomorphic form. It is evident that the cyatholipid tracheae could have originated only from modification of the outer distal portion of each atrium and from the lamellae. The other two families within the Araneoidea which have probably followed a similar path are the Erigonidae and Mysmenidae. In both of these families the paired spiracles have been retained in at least some species in conjunction with the transverse duct linking the atria but then the apodemal lobes are not present. It is therefore not possible to be positive that the main tracheal organisation in these latter two families is lamellate in origin and if the tracheal tufts were of apodemal origin then the apparent similarities are merely parallelisms.

If however the transformation series of all three families are indeed based on lamellate modification, then the tracheal system could constitute a strong synapomorphy which could set them aside from the other araneoids. The form of snare found in each of these families is also compatible with a monophyletic interpretation



Figs. 60-67 *Tekella absidata* (Urquhart). 60 Ventral view, palp. 61,62 Distal portion of embolus and parembolic flap. 63 Median apophysis. 64,65 Retrolateral view cymbium showing cymbial notch. 66,67 Internal genitalia photographed from above at different angles.



Figs. 68-73 *Tekella nemoralis* Urquhart. 68 Ventral view palp. 69 Distal portion of embolus and parembolic flap. 70,71 Lateral view cymbium showing cymbial notch. 72 Median apophysis. 73 Female internal genitalia.

and after disentangling the Erigonidae from the Linyphiidae this association would seem worthy of further study.

Cyatholipus Simon, 1894

Cyatholipus Simon 1894 Hist.Nat. des Araignées. 1(3):712. Petrunkevitch 1928. Trans.Connect.Acad.Arts Sc. 29:144. *Moero* O.P. Cambridge. 1903 Ann.S.Afr.Mus. 3(5):156. Petrunkevitch. 1928. Trans.Connect.Acad.Arts Sc. 29:233. *Type species Cyatholipus hirsutissimus* Simon, 1894.

Simon (1894) described three species at the time he established the genus *Cyatholipus*. Two of these were from South Africa (*hirsutissimus* and *quadrimaculatus*) while the third (*dentipes*) was from Jamaica. From the limited distribution of the other genera it is unlikely that the Jamaican species does belong in *Cyatholipus*. The recent redescription of *C.dentipes* by Wunderlich (1978) clearly established the species as a cyatholipid but unfortunately the male palp of neither of the South African species have been studied in sufficient detail to provide any firm comparison and for the present I leave *dentipes* in *Cyatholipus*.

The epigynum of *C.quadrimaculatus* which I have examined is however very different from that of *dentipes* as illustrated by Wunderlich and is closer to a number of the species of *Tekella*. The internal genitalia (fig. 51) differs little from that of *Tekella nemoralis* Urquhart (Fig. 73) where the sclerotised paired receptacula are accompanied by only a small membraneous lobe. SEM examination of *C.quadrimaculatus* has enabled a number of the characters not mentioned by Simon to be noted. The tarsal organ is a smooth rounded dome with the typically small aperture and the bothria have the posterior hood reduced to lateral ridges (Fig. 31). The pedipalp claw is reduced to a small denticle and the tarsal claws are similar to those recorded for *Tekella*.

The respiratory system follows the same pattern recorded for all cyatholipids. Because Simon has only illustrated the lateral views of the palps of the species he established it is difficult to relate these to the other genera.

Tekella Urquhart 1894

Linyphia (part) Urquhart. 1889 Trans.N.Zeal.Inst. 21:140. *Tekella* Urquhart 1894 Trans.N.Zeal.Inst. 26:211. Bryant 1933 Rec.Cant.Mus. 4(1):19.

Diagnosis Separated from *Tekelloides*, *Teemenaarus* and *Toddiana* by the ovoid abdomen; and from all other genera by the presence of a median scape on the epigynum and the distinctive parembolic processes.

Description Carapace dark brown and heavily sclerotised with the thoracic region rugose. Head region highest in front of the fovea and sloping down to the eyes. Eight eyes in two rows with the AME smaller than the lateral eyes. Lateral eyes contiguous. Clypeus vertical, more than twice the diameter of an AME.

Chelicerae with strong teeth on both margins. Legs slender without denticles. Leg formula 1234, with first pair of legs much the longer. Abdomen ovoid, without scutes. Colulus a strongly developed triangular plate with few hairs. Epigynum with a median lobe. Internal genitalia with a single pair of more or less spherical thickwalled receptacula associated with a membraneous sac which may be convoluted.

Cymbium of male palp with typical retrolateral notch. Bulb with a curved embolus provided with a prominent subdistal parembolic process. Median apophysis large, usually T-shaped. Conductor absent.

Type species *Tekella absidata* Urquhart, 1894.

Tekella has speciated to a greater extent than the other two New Zealand genera (*Tekelloides* and *Hamea*). The distribution of the species follows closely that found in other forest dwelling spiders suggesting that the spiders do not have strong dispersal mechanisms. The genus is found in the North and South Islands as well as on Stewart Island but has not been recorded from the Three Kings Islands in the North or from the Subantarctic islands in the South.

The snares are usually constructed on treetrunks or mossy banks but are also found in low shrubs and vines. As with *Tekelloides* the webs may be found in considerable numbers and closely spaced but each web is generally inhabited by a single spider and the webs are not interconnected. As mentioned earlier undescribed theridiids similar in appearance to *Tekella* are commonly found hanging on the threads below the sheet along with the host spider and are presumed to feed on prey caught in the host web but this has not yet been observed.

Tekella absidata Urquhart 1894

1894 *T.absidata* Urquhart.Trans.N.Zeal.Inst. 26:211
1933 *T.nemoralis* (in synonymy) Bryant.Rec.Cant.Mus. 4(1):19
1978 *T.nemoralis* Wunderlich.Zool.Beitr. 24(1):39

Figs. 32, 33, 36, 37, 58, 64-67.

FEMALE

Measurements

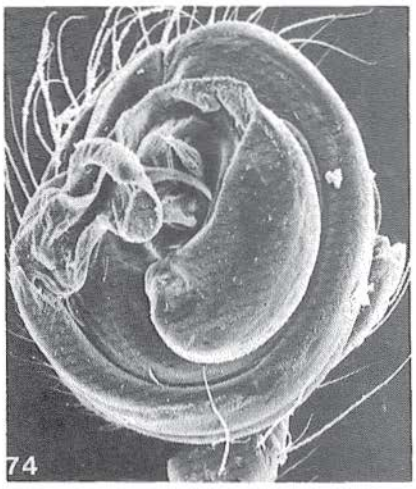
Carapace	length	1.06	width	0.72
Abdomen	length	1.23	width	0.82

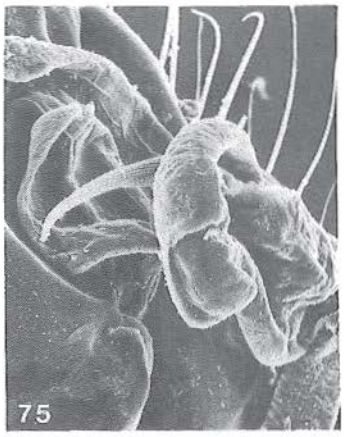
	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	1.62	0.25	1.52	0.95	0.62	4.96
Leg 2	1.11	0.24	0.90	0.72	0.45	3.42
Leg 3	0.73	0.21	0.51	0.43	0.31	1.99
Leg 4	1.05	0.21	0.65	0.53	0.31	2.75
Palp	0.31	0.12	0.15		0.31	0.89

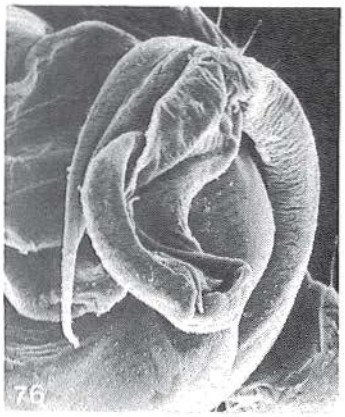
Colour Carapace dark brown, without patterning. Legs distinctly banded. Abdomen strongly patterned as shown in Figs. 36, 37.

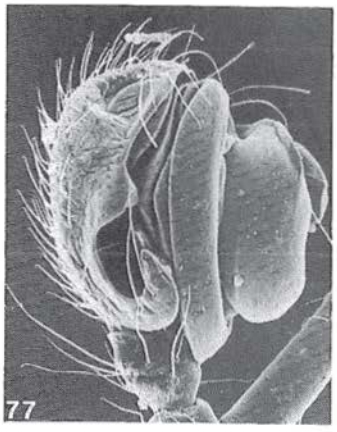
Carapace The surface, particularly on the thorax is coriaceous. Fovea indistinct. Clypeus vertical, twice as high as an AME.

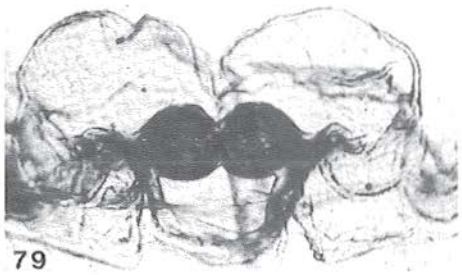
Eyes From above the anterior row is straight and the posterior slightly procurved. The lateral eyes are situated on a distinct mound. Ratio of AME:ALE:PME:PLE = 6:4:4:4. AME sub-

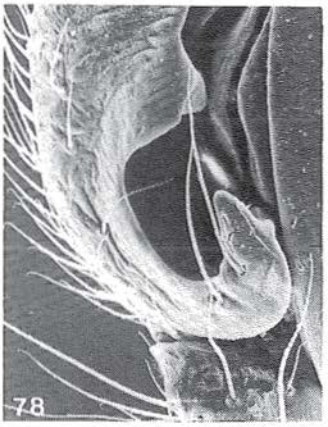




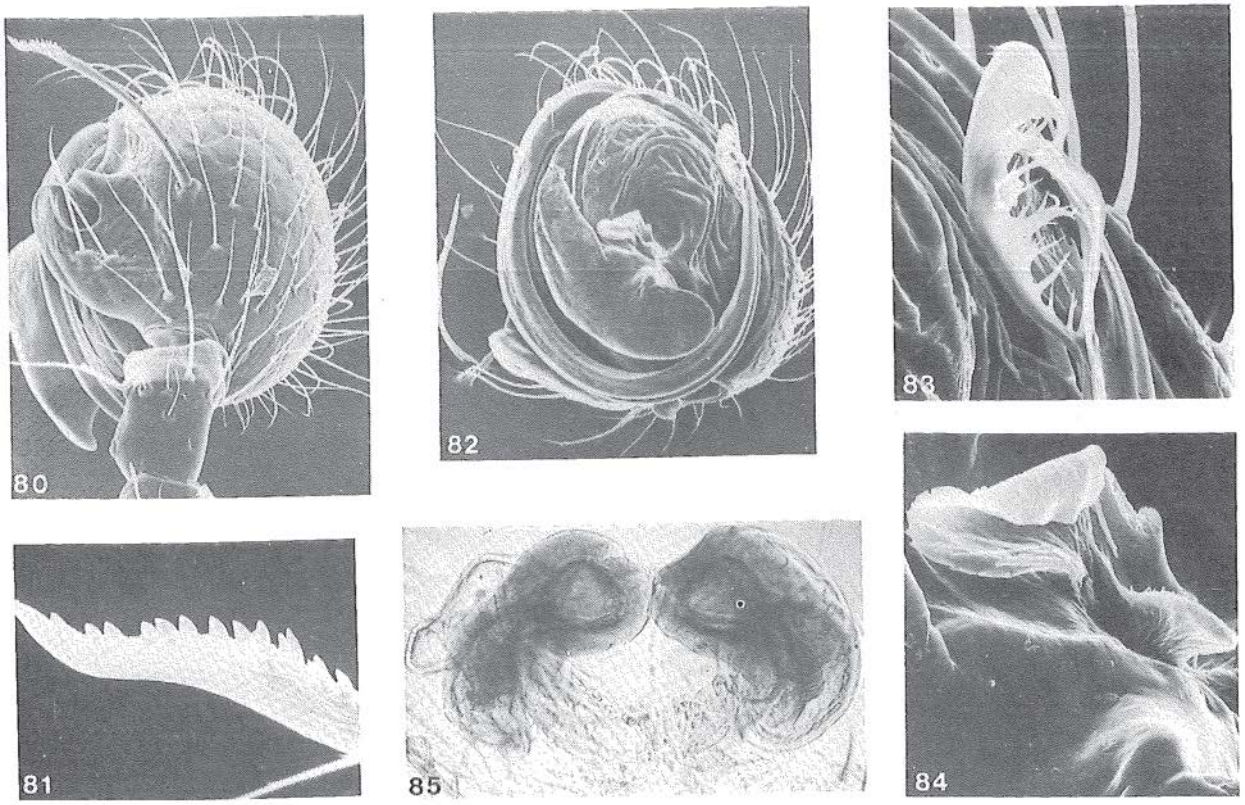








Figs. 74-79 *Tekella lineata* n.sp. 74 Ventral view palp. 75,76 Distal portion of embolus and parembolic flap. 77 Retrolateral view of male palp. 78 Cymbial notch. 79 Female internal genitalia.



Figs. 80-85 *Tekella uniseta* n.sp. 80 Retrolateral view male palp showing cymbial notch and bristles. 81 Distal portion cymbial bristles. 82 Ventral view male palp. 83 Parembolic flap. 84 Median apophysis. 85 Female genitalia from above.

contiguous, separated from ALE by 4/6 of diameter of an AME. PME separated by the same distance and from the PLE by 5/6.

Chelicerae Vertical, swollen on the anterior surface. Promargin with four and retromargin with three teeth.

Genitalia Epigynum with a relatively broad median lobe (Fig. 58). Internal genitalia as in Figs. 66 , 67 . The paired receptacula are relatively small while the membranous portion is strongly developed.

MALE

Measurements

Carapace	length	0.85	width	0.72
Abdomen	length	0.91	width	0.74

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
	1.25	0.21	1.11	0.82	0.62	4.01
Leg 2	0.75	0.21	0.82	0.55	0.47	2.80
Leg 3	0.55	0.15	0.45	0.41	0.32	1.88
Leg 4	0.83	0.22	0.55	0.41	0.35	2.36
Palp	0.32	0.12	0.08		0.33	0.85

Similar in most characters to the male. The palp is shown in Figs. 60-65. There is a striking platelike extension along the inner surface of the embolus beyond the denticulate process which immediately distinguishes the species from the North Island *nemoralis* in which only the denticulate lobe is present.

Type Holotype female from the Urquhart collection without locality data is in the Canterbury Museum (seen).

Records South Island: Canterbury. Glentui Gorge, from sheetweb, 14.III.54, R.R.F. Deans Bush, Christchurch, 19.XII.49, 20.XII.49, J.S.Dugdale. Riccarton Bush, Christchurch, 29.I.68, R.R.F. Okuti Valley, 21.XI.75, R.R.F. Akaroa, 4.XII.75, R.R.F. Prices Bush, 10.I.46, J.T.Salmon. Kaituna Valley, 13.IV.67, 24.V.75, 10.VIII.75, R.R.F. Fiordland. Lake Manapouri, beech forest, swept, 6.II.53, B.J.Marples. Lake Manapouri, 1.XII.66, C.L.W. Otago. Waipori Gorge, 18.XI.66, 8.XII.66, R.R.F., C.L.W. Evansdale Glen, 21.X.73, 16.X.79, R.R.F. Opoho Bush, Dunedin, January, 1946, T.M. Smith. Opoho Bush, Cemetery Road, Dunedin, 14-21.VII.70, pitfall, C.L.W. Opoho Bush, Cemetery Road, Dunedin, leaf mould, 11.I.71, C.L.W. Frasers Gully, Dunedin, 13.V.67, R.W. Hutton, C.L.W. Taieri Mouth, 16.IV.62, W.T. Popplewell. Coultes Gully, Taieri Mouth, 6.VII.52, B.J.Marples. Bush near Taieri Mouth-Waihola Road, 26 .XI.66, C.L.W. Bull Creek, 25.III.77, R.R.F. Bull Creek Bush, 15.V.67, R.W.Hutton. C.L.W. Bull Creek, 27.III.70, C.L.W. Southland. Clinton, 30.IX.59, R.R.F. Dolamore Park, Gore, 15.IX.79, R.R.F. Tuatapere Domain, 1.XII.66, C.L.W. Alton Burn, Tuatapere, 11.III.70, C.L.W. Alton Burn, Tuatapere, 25.XI.70, R.R.F. C.L.W. Tuatapere, 12.III.81, R.R.F. Catlins, litter, 19.II.78, R.R.F. Papatotara, 11.III.70, C.L.W. Western Tewaewae Bay, 11.III.70, C.L.W. Colac Bay area, 24.XI.70, R.R.F., C.L.W. Stewart Island. January 1964, M.Watt. Fern Gully, Stewart Island, in foliage, 21.XI.46, R.R.F. Lee Bay, Stewart Island, 25.XII.76, A.C.Harris.

The type specimen is poorly preserved but nevertheless recognisable. The specimen was sent to Urquhart by Powell who probably collected it near Christchurch where the species is still common. The species is widespread along the east side of the South Island from Canterbury to Southland and is also present on Stewart Island. The webs are often found in large numbers in dense mats of creepers such as *Muehlenbeckia* as well as more sparsely in the more typical habitats such as the trunks of trees.

Tekella nemoralis (Urquhart 1889)

1889 *Linyphia nemoralis* Urquhart. Trans.Z.Zeal.Inst. 21:140
1933 *Tekella nemoralis*. Bryant. Rec.Cant.Mus. 4(1):19.
Figs. 38, 39, 48, 54, 68-73.

FEMALE

Measurements

Carapace	length	0.83	width	0.72	
Abdomen	length	1.15	width	1.05	

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	1.62	0.23	1.41	0.95	0.62	5.83
Leg 2	1.05	0.22	1.05	0.65	0.41	3.38
Leg 3	0.55	0.15	0.43	0.41	0.32	1.88
Leg 4	0.82	0.15	0.63	0.45	0.35	2.40
Palp	0.21	0.07	0.10		0.25	0.63

Apart from the genitalia this species is very similar to *absidata*. The colour pattern of the abdomen is shown in Figs. 38, 39. The relative size of the eyes and the spacing is also similar. The epigynum is readily separated by the narrower and relatively wider opening and the much smaller median scape (Fig. 54). The internal genitalia are strikingly different with the reduction of the membraneous portion and the enlargement of the thickwalled receptacula (Fig. 73).

MALE

Measurements

Carapace	length	0.80	width	0.71	
Abdomen	length	1.06	width	0.85	

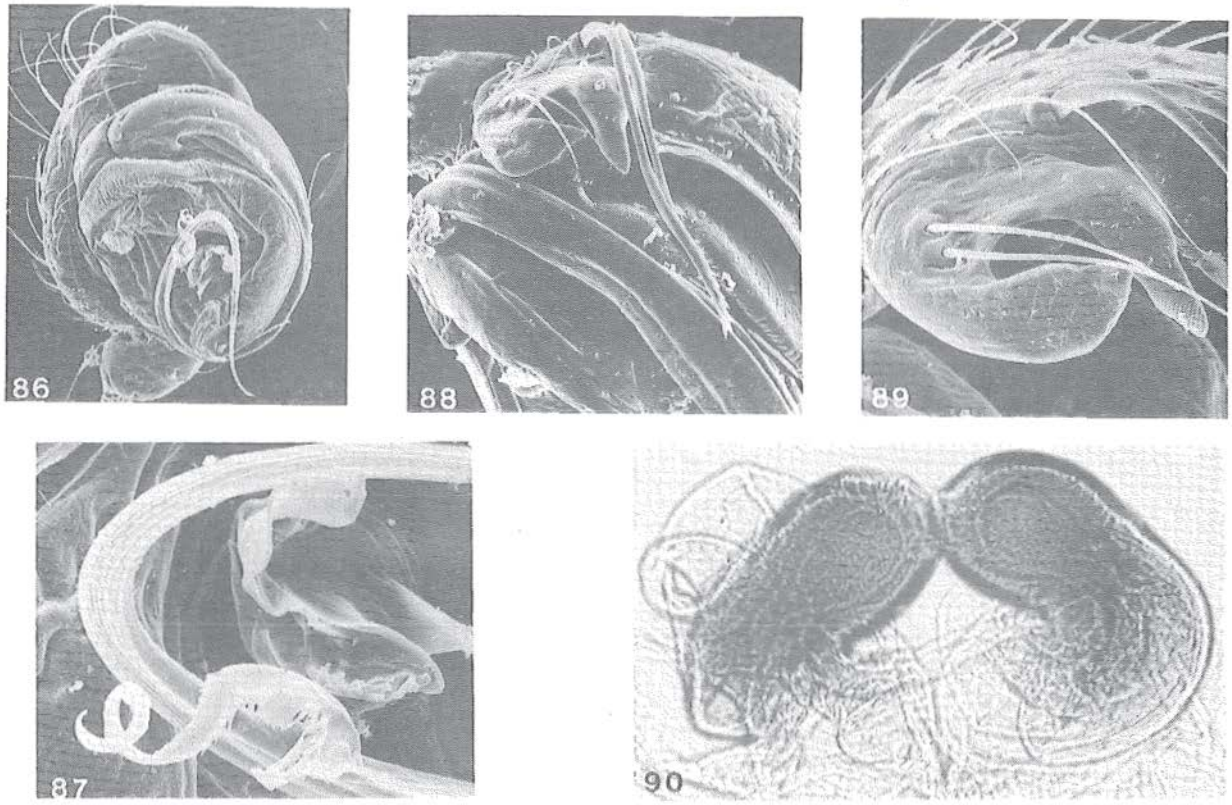
	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	2.12	0.25	2.05	1.41	0.72	6.55
Leg 2	1.31	0.22	1.32	0.85	0.53	4.23
Leg 3	0.62	0.15	0.51	0.45	0.35	2.08
Leg 4	0.95	0.15	0.75	0.52	0.42	2.74
Palp	0.31	0.11	0.11		0.31	0.84

Similar in general structure to the female. The palp while sharing the strong T-shaped median apophysis with *absidata* is clearly distinguished from this species by the absence of the distal extension on the embolus (Figs. 68-72). The anterior margin of the cymbial notch bears a small tubercle which is also absent from *absidata*.

Type Holotype male from the summit of Te Aroha. Urquhart collection in the Canterbury Museum (seen).

Records North Island. Mamaku Bush, 27.IV.52, B.J.Marples. Waikare-iti Track, Waikaremoana, on foliage, 10.XII.46, R.R.F. Waikare-iti, on foliage, 14.XII.46, R.R.F. Waikare-iti, 22.XII.49, C.L.W. Aniwanawana, 22.I.66, R.W. Hutton, Aniwanawana, Waikaremoana, 4.I.69, R. W. Hutton, 9 16.III.69, H.A. Oliver. Mount Ngamoko track, under log, 14.XII.46, R.R.F. Mt.Ngamoko, 3500 feet, Panekiri track, on foliage, 11.XII.46, on leaf mould, R.R.F. Mt.Egmont, 22.II.67, 24.II.67, C.L.W. Vinegar Hill Reserve, 12.XII.48, 6.I.67, 10.I.74, R.R.F. Reserve Ashurst, 21.I.59, R.R.F. Owhango, 26.II.67, C.L.W. Inglewood, 28.VIII.60, B.J. Marples. Mount Holdsworth, 2000 feet, Tararua Range, moss, 68/201, 19.XI.68, S. Eldrige. Matahiwi, Masterton, 5.III.67, C.L.W. Turanganui River, Wairarapa, 14.VI.47, F.K. Dell. Orongorongo Reserve, near Wellington, litter, 69/132, J.S. Dugdale. South Island. Nelson. Riwaka Valley, 24.III.66, C.L.W. Riwaka River, near Motueka, 17.XII.61, B.J. Marples. Boatmans Creek, litter 71/117. 4.X.71, J. McBurney. Mawhera S.F. 15 km S.E. Ngahere. moss, 71/145, 11.XI.71, J.S. Dugdale.

The type specimen is fragmentary but one of the palps remain intact and this shows clearly the specific characters. The species is widely distributed over most of the North Island and also occurs in the Nelson district. A single male specimen from Lewis Pass with a similar palp has



Figs. 86-90 *Telcella biseta* n.sp. 86 Ventral view male palp. 87 Parembolic flap. 88,89 Retroventral surface of cymbium showing notch and paired bristles. 90 Female internal genitalia from above.

also been examined but this specimen has an entirely different reddish brown colour pattern and may represent a further related species.

Tekella lineata n. sp.

Figs. 44, 45, 49, 57, 74-79.

MALE

Measurements

Carapace	length	0.82	width	0.65	
Abdomen	length	0.82	width	0.81	

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.82	0.21	0.73	0.55	0.45	2.75
Leg 2	0.71	0.21	0.62	0.45	0.42	2.40
Leg 3	0.45	0.15	0.35	0.31	0.32	1.58
Leg 4	0.62	0.21	0.41	0.35	0.33	1.92
Palp	0.25	0.06	0.10		0.32	0.73

Colour Carapace and appendages dark reddish brown. The abdomen is strongly patterned as shown in Figs. 44, 45. The characteristic feature of the pigmentation is the strong longitudinal dorsal black band which is not found in any other species.

Carapace Typical for the genus.

Eyes The AME arc relatively small. The ratio of AME:ALE:PME:PLE= 3:6:5:6. The AME are separated by slightly more than their diameter and from the ALE by twice this distance. The PME are separated by distance equal to the diameter of an AME and from the PLE by three times this distance.

Sternum Typical in shape; as long as wide but strongly granulate.

Maxillae Subtriangular and strongly convergent but not meeting in the midline.

Labium Almost twice as wide as long. Anterior margin only weakly rebordered.

Chelicerae Anterior surface only slightly swollen. Both pro- and retromargins with three teeth.

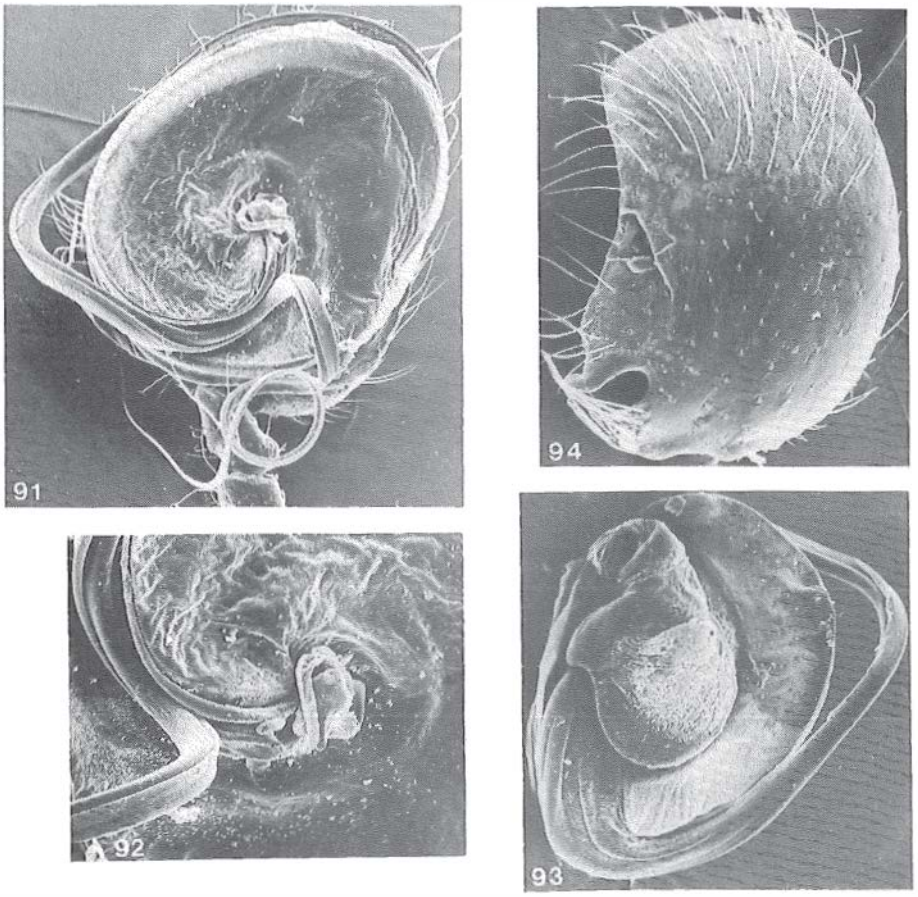
Palp The cymbial notch is large (Figs. 77, 78) with the proximal margin strongly developed into a curved lobe. The bulb is prominent and the embolus stout (Figs. 14, 76). There is a massive subdistal parembolic structure in the form of a folded plate (Fig. 75) but no denticulate process as in other species. The median apophysis is reduced to an insignificant ridge below the tip of the embolus (Fig. 75).

FEMALE

Measurements

Carapace	length	0.75	width	0.65	
Abdomen	length	1.15	width	1.05	

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.85	0.21	0.61	0.45	0.42	2.54
Leg 2	0.65	0.15	0.52	0.41	0.41	1.94
Leg 3	0.52	0.15	0.31	0.25	0.25	1.48
Leg 4	0.63	0.22	0.42	0.35	0.32	1.74
Palp	0.21	0.05	0.10		0.21	0.57



Figs. 91-94 *Hanea paturau* n.sp. 91-92 Ventral view male palp. 93 Dorsal surface of detached male bulb. 94 Prolateral surface of cymbium.

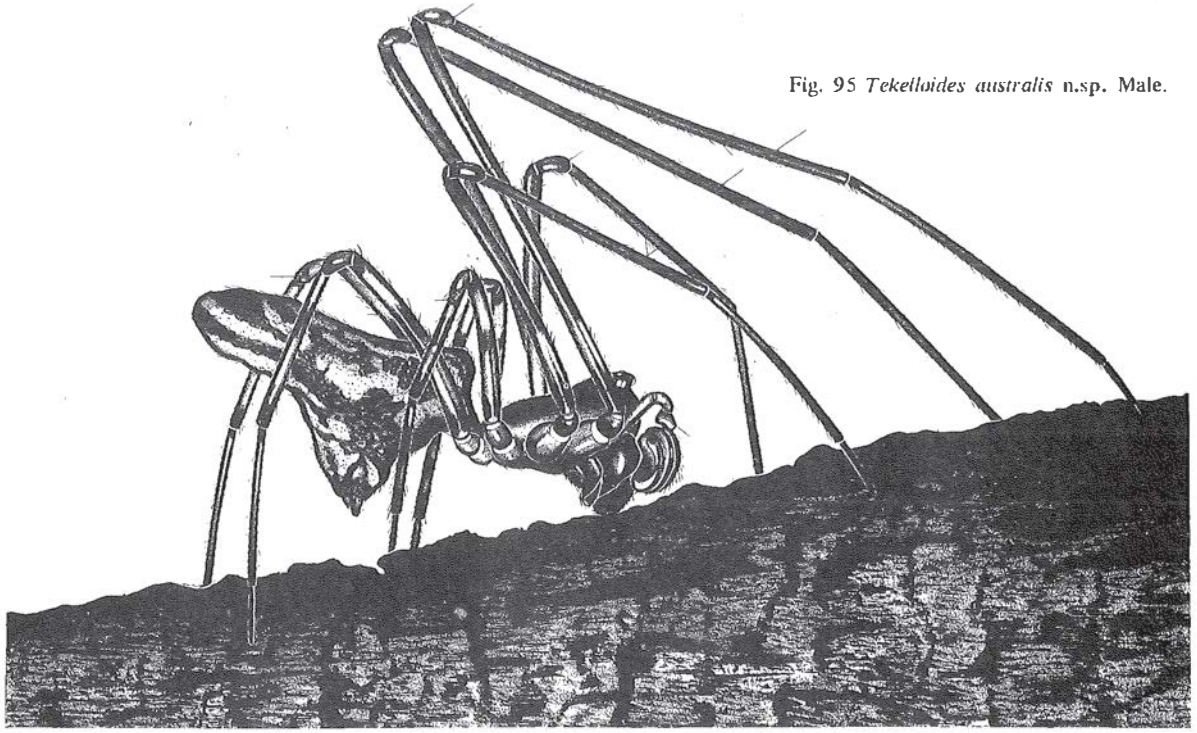


Fig. 95 *Tekelloides australis* n.sp. Male.

Similar to the female in general structure and colouration. The epigynum shown in Fig. 57 is similar to *absidata* but the median lobe is more slender and longer. The internal genitalia (Fig. 79) also show some relationship to nemoralis with the strong development of the membranous structures and the small sclerotised receptacula.

Types Holotype male, allotype female. Fiordland, Cascade Creek, January 18, 1979, R.R. Forster (Otago Museum).

Records

South Island, Canterbury. Devils Punchbowl track, 2600 feet, 16.XI.66, litter from *Polystichum vestitum*, H.K. Walker. Governors Bush, Mount Cook, 17.I.82, R.R.F. Otago, Haast Pass, 13.XII.77, moss, R.R.F. Haast Pass, 8.IV.79, R.R.F. Makarora, 17. III.66, night collecting, R.R.F. Fiordland, Cascade Creek, 6.X.75 in moss, R.R.F.

This small and distinctive species is apparently restricted to the southern half of the main divide of the South Island. The reproductive organs suggest that it is closely related to the common east coast *absidata*. The parembolic structure could represent a modification of the distal plate found in this species accompanied by the loss of the denticulate flap characteristic of all other *Tekella* species.

Tekella unisetosa n. sp.

Figs. 40, 41, 50, 52, 80-85.

MALE

Measurements

Carapace	length	1.33	width	1.22	
Abdomen	length	1.52	width	1.12	

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	2.44	0.41	2.71	2.00	1.05	8.61
Leg 2	2.03	0.32	1.81	1.52	0.81	6.49
Leg 3	1.03	0.25	0.82	0.75	0.45	3.30
Leg 4	1.32	0.32	1.05	0.85	0.55	4.39
Palp	0.62	0.25	0.11		0.42	1.40

Colour. Carapace reddish brown with black reticulate markings.

Abdomen With a strong black pattern as shown in Figs. 40, 41.

Carapace Rather squat with the fovea represented by a shallow pit. Head region highest immediately above the fovea and sloping gently down to the eyes. Thoracic region rugose.

Eyes Ratio of AME:ALE:PME:PLE= 7:11:10:13. Both the AME and the PME are separated from each other by a distance equal to one half and from the lateral eyes by 2½ times of the diameter of an AME. AME separated from the PME by 9/7 of the diameter of an AME.

Sternum As long as wide and strongly rugose. Maxillae and labium typical for the genus.

Chelicerae There is a prominent swelling on the anterior face. The distal portion of the chelicerae are divergent and the fang is long and curved. Three strong teeth along each margin widely separated from a further smaller tooth near the base of the fang.

Palp Cymbium large and spoonshaped with a single strong distally serrate spine behind the retrolateral notch (Figs. 80, 81). The parembolic process is denticulate with a slender distal extension (Figs. 82, 83). Median apophysis well developed but in the form of a thin erect plate (Fig. 84).

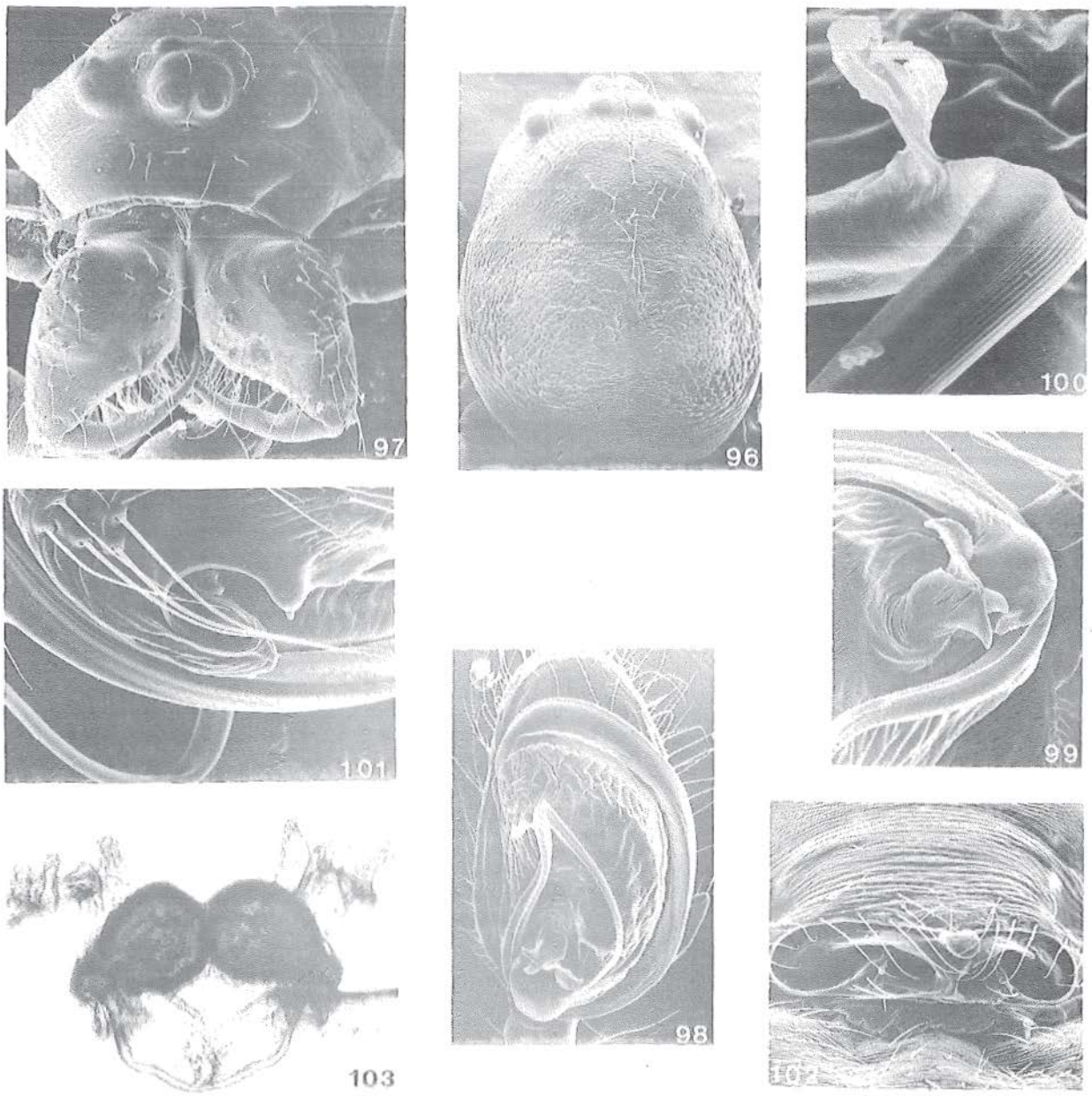
FEMALE

Measurements

Carapace	length	1.13	width	0.92
Abdomen	length	1.52	width	1.44

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	1.83	0.32	1.72	1.25	0.75	5.87
Leg 2	1.35	0.25	1.35	0.92	0.62	4.39
Leg 3	0.81	0.21	0.63	0.53	0.41	2.59
Leg 4	1.12	0.25	0.84	0.62	0.45	3.28
Palp	0.32	0.11	1.21		0.35	0.99

Similar in most characters to the male. The chelicerae are not divergent and the teeth are grouped together. The epigynum is reflexed so that the median lobe is directed



Figs. 96-103 *Tekelloides australis* n.sp. 96 Dorsal view carapace female. 97 Anterior view carapace, chelicerae, male. 98 Ventral view male palp. 99 Median apophysis. 100 Parembolic process. 101 Cymbial notch. 102 Female epigynum. 103 Female internal genitalia from above.

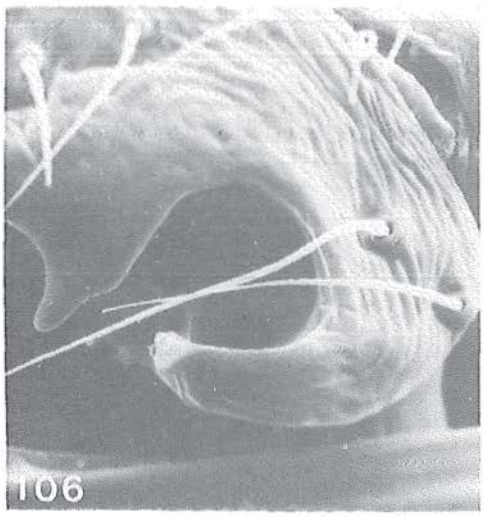
ventrally and the openings to the receptacula exposed (Fig. 52). The median lobe is distinctly wider than in all the other species except the closely related *bisetosa*. The internal genitalia are typical but the receptacula are not clearly spherical and merge broadly with the membraneous portion (Fig. 85).

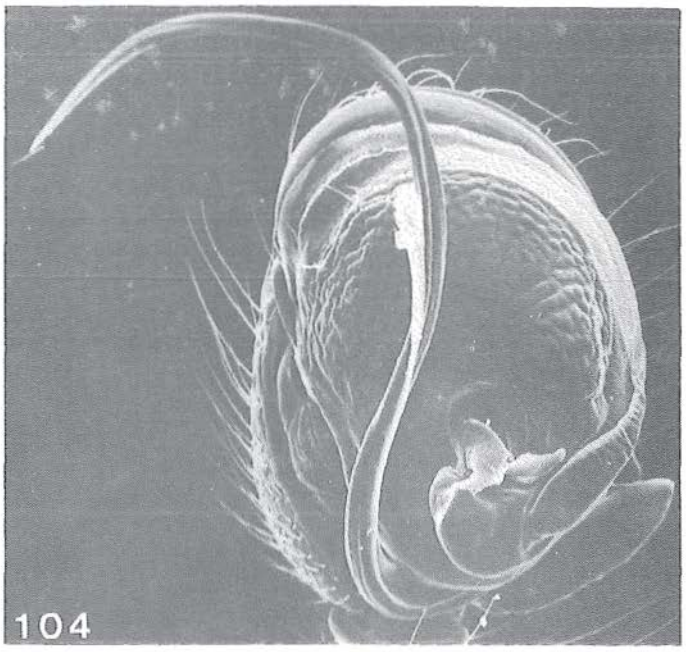
Types Holotype male, allotype female, Fiordland, Cascade Creek, October 6, 1978, R.R. Forster (Otago Museum.)

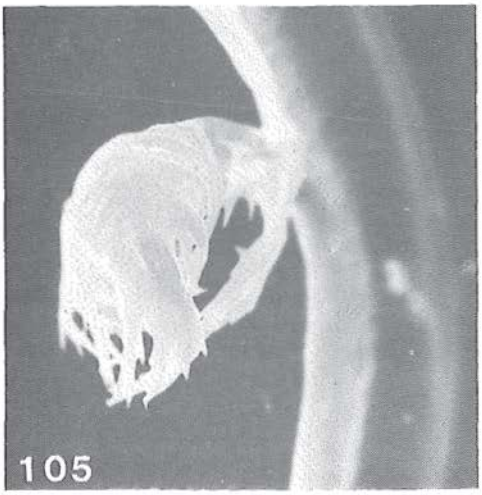
Records

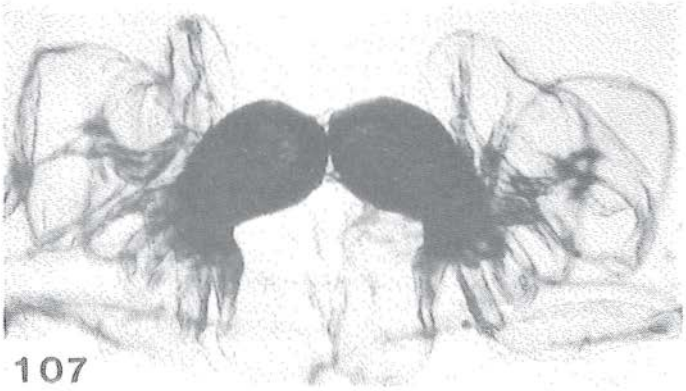
South Island. Fiordland. Homer Forks, mosses on stones, 14.XII.44, J.T. Salmon. McKerrow Hut, Hollyford Valley, 24.I.55, R.R.F., J.S. Dugdale. Caswell Sound, under logs, 18.IV.49, R.R.F. Lake Te Au, near South Arm 24.XII.53, R.R.F. Cascade Creek, 12.I.80, R.R.F.

T.unisetosa and *T.bisetosa* form a distinctive group readily recognised by the form of both the epigynum and the male palp which show affinity with the North Island *nemoralis* rather than *absidata* from the east coast of the South Island. *T.unisetosa* is apparently restricted to the Fiordland region and in Cascade Creek is found sympatric with *T.lineata* as well as *Tekelloides australis*. All three species construct typical sheetwebs on mossy treetrunks and along fallen logs.









Figs. 104-106 *Tekella flavmotatus* (Urquhart). 104 Ventral View male palp. 105 Parembolic process. 106 Cymbial notch. 107 Female genitalia from above.

Tekella bisetosa n. sp.,

Figs. 42, 43, 53, 86-90

MALE

Measurements

Carapace	length	1.23	width	0.92	
Abdomen	length	1.22	width	0.85	

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	2.42	0.41	2.23	1.84	0.92	7.62
Leg 2	1.63	0.31	1.52	1.12	0.71	5.29
Leg 3	0.91	0.22	0.65	0.55	0.40	2.72
Leg 4	1.22	0.31	0.92	0.73	0.45	5.63
Palp	0.51	0.15	0.12		0.35	1.13

The most distinctive features separating this species from *unisetosa* are the presence of two spines above the retrolateral notch of the cymbium (Figs. 88, 89) and the long spinous process on the distal margin of the notch. The parembolic process (Figs. 86, 87) is elongated as in *unisetosa* but the denticulations are not as strongly developed.

FEMALE

Measurements

Carapace	length	1.13	width	0.82	
Abdomen	length	1.35	width	1.05	

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	2.12	0.31	1.83	1.32	0.61	6.19
Leg 2	1.51	0.25	1.32	0.91	0.42	4.41
Leg 3	0.82	0.15	0.62	0.52	0.41	2.52
Leg 4	1.11	0.21	0.85	0.65	0.41	3.23
Palp	0.32	0.11	0.23		0.32	0.98

The epigynum has the same form as *unispinosa* but the median lobe is wider, and the septum separating the aperture leading to the receptacula are much narrower (Fig. 53). The internal genitalia are also similar but the membraneous portion is relatively larger (Fig. 90).

Types Holotype male allotype female. Westland, Bullock Creek, Punakaiki, January 18, 1950, R.R. Forster (Otago Museum).

Records
Nelson. Karamea Bluff, Summit 1420 feet, litter, 29.IX.66, R.R.F. Lower Flora Track, 20.I.48, R.R.F. Leslie Valley Track, ex foliage, 24.I.48, R.R.F. Salisbury Opening, Mt.Arthur, tableland, ex foliage, 21.I.48, R.R.F. Granity from Niggerhead, 28.IX.66, R.R.F., C.L.W. Donald Creek, Nelson, 20.V.79, R.R.F. Westland, Fletchers Creek, N. Inangahua S.F. 19.IX.72, moss and litter 7,2/172, J.S.Dugdale. Royal Creek, near Maruia Springs Hotel, 12.II.69, C.L.W. Springs Junction, Lewis Pass, 25.IV.77, R.R.F. Three miles east of Kumara 30.IX.66, R.R.F., C.L.W. Bullock Creek, Punakaiki, 18.I.50, R.R.F. Haast Pass, 8.IV.79, R.R.F. Moana, 10.III.50, R.R.F.

The two species *unisetosa* and *bisetosa* appear to be allopatric with *unisetosa* restricted to the Fiordland region while *bisetosa* extends along Westland and into southern Nelson. In northern Nelson the dominant species is *T.nemoralis* which otherwise is restricted to the North Island.

Hanea new genus

Diagnosis Similar to *Tekella* in general appearance but separated by the large bulb of the male palp, the absence of parembolic processes and a median apophysis.

Description Carapace dark brown and the abdomen with a black pattern as in *Tekella*. Abdomen ovoid without scutes but with weak sclerotisation on the epigastrium. Six spinnerets in a compact group. Colulus triangular with few hairs.

Eyes in two rows with the laterals contiguous and placed on a prominent mound which projects over the lateral margins of the head. Cymbium of male palp spoonshaped not covering the full width of the bulb which is large. Ventral surface of the bulb flat with a small median ridge but lacking a median apophysis. Embolus long and slender coiled around the margin of the bulb and across the ventral surface to the median ridge which acts as a conductor. The embolus lacks any secondary processes. Female not known.

Type species Hanea paturau n. sp.

Distribution Nelson, New Zealand.

Only a single species is known and this from only two specimens, both males.

Hanea paturau n. sp.

Figs. 46, 47, 91-94.

MALE

Measurements

Carapace	length	0.93	width	0.85	
Abdomen	length	0.75	width	0.71	

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	1.15	0.25	1.23	1.05	0.55	4.20
Leg 2	0.85	0.25	0.82	0.61	0.45	2.98
Leg 3	0.55	0.20	0.41	0.41	0.33	1.90
Leg 4	0.65	0.20	0.52	0.45	0.33	1.95
Palp	0.35	0.12	0.12		0.61	1.20

Colour Carapace and appendages dark reddish brown. Abdomen creamy white with a black pattern limited to the lateral surfaces (Figs. 46, 47).

Carapace Finely rugose. Head region not strongly differentiated from the thoracic region but sloping gently up to the eyes. Fovea distinct.

Eyes Ratio of AME:ALE:PME:PLE = 2:4:4:4. AME separated by 3/2 of the diameter of an AME. AME separated from the ALE and the PME by 5/2 and the PLE PME are separated by the same distance from the PLE. The lateral eyes are placed on a distinct tubercle.

Sternum As long as wide and broadly clavate behind. Maxillae directed across the labium but not meeting in the midline. Labium as long as wide and strongly rebordered.

Chelicerae With two strong teeth at the base of the groove and two or three smaller teeth along each margin.

Legs Typical for the family, without denticles.

Abdomen Without scutes although the epigastric region is weakly sclerotised. The epiandrous spigots appear to be few but these structures have not been examined under SEM.

Palp The palpal bulb is extremely large. The cymbium is spoon shaped with a distinct retrolateral notch near the proximal surface (Fig. 94.) The anterior lip of the notch is lobulate. The bulb is large and flattened ventrally (Fig. 91). The embolus is spiniform and coils around the margin of the tegulum before curving up the median surface to abut on to the median ridge. There are no parembolic processes (Figs. 91, 92).

Type Holotype male Nelson, Paturau, from litter, August 18, 1964, E.S. Gourlay (Entomology Division, Auckland).

Records
The only other specimen in the collections examined is an immature male collected with the holotype.

This species appears to be localised but as the type locality has not been extensively collected only a single mature specimen is available at present. The distinctive form of the male palp clearly separates the genus from the widespread *Tekella*. The absence of a median apophysis and parembolic processes associated with the presence of a ridge on the tegulum is very similar to the form found in the Australian ***Matilda*** but this resemblance must be due to convergence.

Tekelloides n. gen.

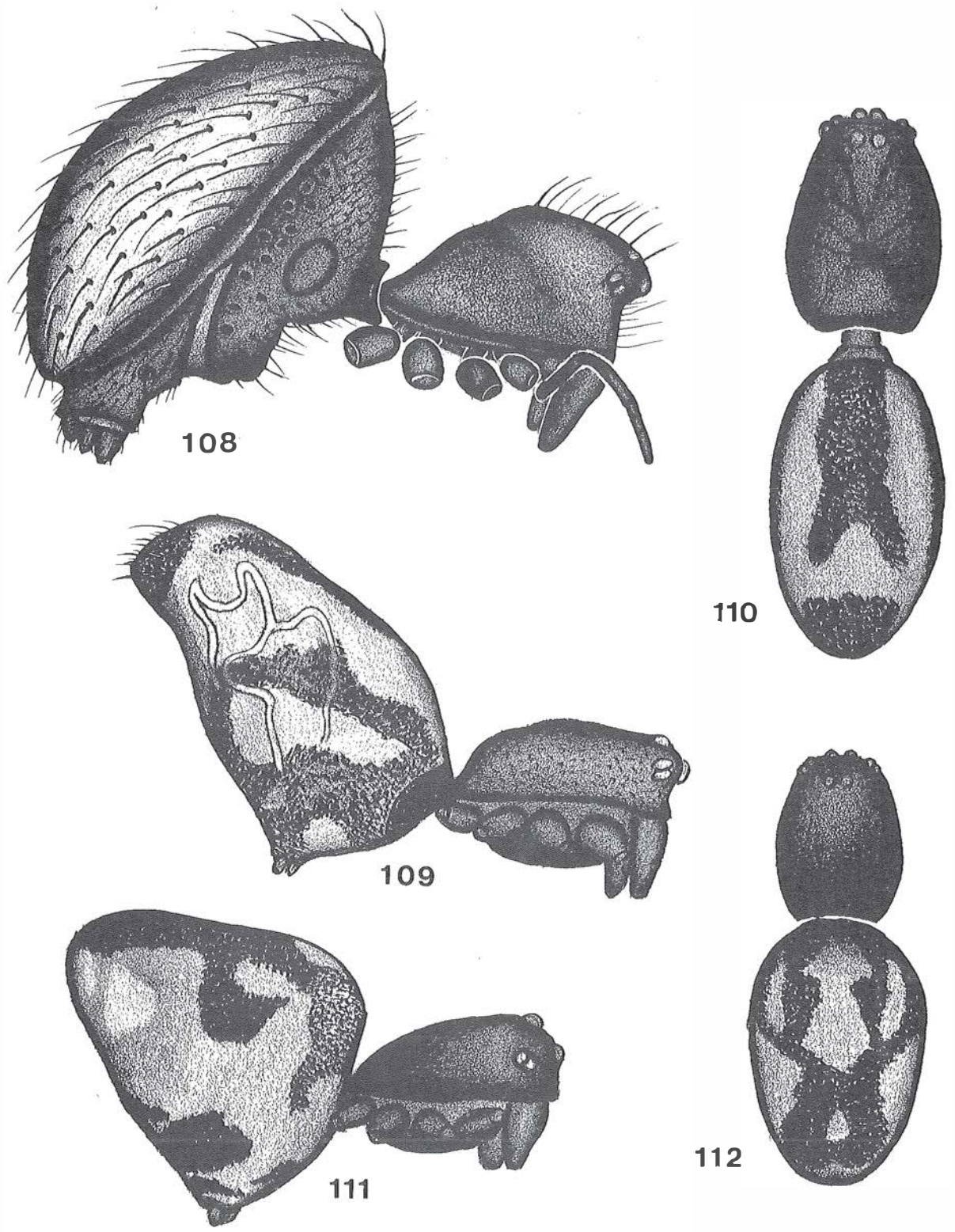
Diagnosis Related to *Tekella* but distinguished by the triangular shaped abdomen and the reduced parembolic process.

Description Carapace rugose; head region not strongly differentiated. Eight eyes in two rows with the lateral eyes and the AME placed on distinct mounds (Fig. 96). Abdomen triangular in lateral view (Fig. 95); more slender in the male. Six spinnerets in a compact group. Colulus triangular. Legs 1 2 3 4 slender and without denticles. epigynum with a median lobe (Fig. 102). Internal genitalia with a pair of thickwalled receptacula (Fig. 103) associated with a convoluted membraneous duct. Embolus coiled around the margin of the bulb with a small parembolic flap (Fig. 100). Median apophysis a strong T-shaped process (Fig. 99).

Type species Tekelloides australis n. sp.

Distribution New Zealand.

The two species of *Tekelloides* are the most common cyatholipids in New Zealand. While the shape of the abdomen would suggest affinity with the two Australian genera *Teemenaarus* and *Toddiana* the male and female genitalia show



Figs. 108-112 Dorsal and lateral views of body. 108 *Matilda australia* n.sp. female. 109,110 *Teemenaarus sylvestris* Davies, female. 111;112 *Toddia daviesae* n.sp., female.

clearly that this is not so and there is a direct relationship with *Tekella*. The two genera are sympatric in their distribution and occupy the same habitat but only rarely are they found together.

As with *Tekella* large numbers of snares may be found closely spaced, particularly on treetrunks, but there appears to be no communication between the webs. Although occasionally the kleptoparasite theridiids found in *Tekella* webs have also been found in association with *Tekelloides* this is rare and appears to a secondary relationship which can occur when the two genera are found in the same area.

Tekelloides australis n. sp.

Figs. 95-103.

FEMALE

Measurements

Carapace	length	0.93	width	0.84	
Abdomen	length	1.71	width	0.95	

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	1.81	0.22	1.52	0.95	0.62	5.12
Leg 2	1.32	0.22	1.21	0.81	0.55	4.11
Leg 3	0.72	0.22	0.62	0.45	0.35	2.36
Leg 4	1.15	0.22	0.73	0.55	0.41	3.06
Palp	0.31	0.11	0.15		0.32	0.89

Colour Carapace dark brown. Legs indistinctly banded.

Abdomen Generally creamy white with a strong black pattern as shown in Fig. 95 but a number of individuals are also pale orange with the black markings reduced or sometimes absent.

Carapace The surface is strongly rugose except for the clypeus which is smooth (Fig. 96).

Eyes Ratio of AME:ALE:PME:PLE = 7:7:6:7. The AME and the lateral eyes are each placed on a prominent mound. The AME are subcontiguous while the PME are separated by a distance equal to the diameter of an AME. The median eyes are separated from the lateral eyes by twice this distance.

Sternum Coriaceous; longer than wide in the ratio of 31:26 and broadly obtuse posteriorly.

Chelicerae Three teeth along each margin. The fang is short.

Epigynum With a small median scape (Fig. 102). Internal genitalia as in Fig. 103.

The abdomen is without scutes or sclerotised thickening.

MALE

Measurements

Carapace	length	1.15	width	0.92	
Abdomen	length	2.00	width	0.75	

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	2.75	0.31	2.65	1.52	0.81	7.84
Leg 2	1.75	0.31	1.65	1.00	0.62	5.13
Leg 3	1.05	0.22	0.93	0.62	0.43	3.25
Leg 4	1.42	0.22	1.04	0.71	0.43	3.82
Palp	0.45	0.15	0.10		0.51	1.21

Similar to the female but the abdomen is more slender in side view. The palp is shown in Fig. 98. The median apophysis is T-shaped and prominent (Fig. 99). The embolus is provided with a small embolic flap where the embolus coils around the distal portion of the tegulum which is irregular in outline but without the toothlike projections characteristic of with a large curved fang (Fig. 97) and the teeth are smaller than in the female.

Types Holotype female, allotype male. Otago, Whare Flat, March 25, 1979, R.R. Forster (Otago Museum).

Records

South Island. Nelson, Riwaka, 11.IV.68, beating, C.L.W. Moss Bush, Riwaka, 7.II.69, C.L.W. Graham Valley Motueka, 12.IV.68, C.L.W. McKee Domain, Ruby Bay, 12.III.67, C.L.W. Aniseed Valley, 1.XII.53, (53,80), B.J. Marples. Leslie Valley Track, 5.I.48, ex foliage, R.R.F. Dun Mountain Track, A.K.Walker. Mount Hercules, 27.IX.66, R.R.F., C.L.W. Westland. Near Wakapohai River, 13.II 66, D.A.McHugh. Lake Paringa, 6-9.XII.60, J.I. Townsend, P.R. Kettle. Lake Paringa 26.IX.66, R.R.F., C.L.W, Okarito 7.XII.49, R.R.F. Open Bay Island, 11.II.71, hand search of *Freycinetia banksii* M.E. Miller. Canterbury, Okaratahi Bridge, North of Conway River, 22.IX.67 C.L.W. Deans Bush, Riccarton, 19.XII.49, 20.XII.49 J.S. Dugdale. Riccarton, Christchurch, 10.II.60, Sedlank. Near Stavely, beech forest, 20.XI.70, C.L.W. Peel Forest, 20.I.82, R.R.F. Fiordland. Gunns Camp, Hollyford, 1.IV.72, C.L.W. Lower Hollyford 2.II.46, beaten from fern, R.R.F. Cascade Creek, 15.II.66, 12.I.71, R.R.F. Cascade Creek, 31.III.72, C.L.W. Haast Pass, 18.XII.77, R.R.F. Te Anau, 2.IV.72, C.L.W. Otago, Trotters Gorge, 27.VII.67, 10.III.75, ex ferns, 30.XII.78, 6.II.79, R.R.F. Goodwood, on back road, 20.X.66, C.L.W. Hawksbury Bush near Waikouaiti, 20.X.66, C.L.W, Taumaka, Lee Stream Bridge, Outram-Hindon Road, 26. I. 69, C.L.W. Waipori Gorge, 18.XI.66, 13.XI.70, R.H.F., C.L.W. Near Dam No.4, Waipori Gorge, 18.XI.66, beating, R.R.F. Waipori Gorge, 12.II.79, 25.I.80, R.R.F. Port Chalmers, 1000 feet above Deborah Bay, 13.V.67, R.W.Hutton, C.L.W. Mount Cargill, site 1, 14.XI.78, litter, R.R.F. Leith Saddle, 4.XI.70, December 1972, 28.VI.75. October 1975, January 1976, 20.I.76, 15.III.77, 21.XI.77, January 1979, 5.II.79, 24.II.79, December 1979, 15.XI.80, 1.I.82, January 1982, Sullivans Dam, Dunedin, October 1965, R.R.F. Frasers Gully, Dunedin, 17.V.69, C.L.W. Whare Flat, 20.III.79 R.R.F. Evansdale Glen, 11.VI.66, C.L.W. Evansdale Glen, 10.X.79, R.R.F. Taieri Mouth, 14.I.62, B.J.Marples. Taieri Mouth, 16.IV.62, W.T. Popplewell. Bush near Taieri Mouth-Waihola Road, 26.XI.66, C.L.W. Purakanui Falls, Catlins, 2.I.70 C.L.W. Catlins, 19.II.78, litter, R.R.F. Tautuku, Catlins, 14.III.79, R.R.F. Tautuku, 11.I.64, R.R.F. Bush near Chimney, Clinton-Wyndham Road, 12.III.70, C.L.W. Southland. Croyden Bush, Gore, 17.II.66, R.R.F., C.L.W. Lake Hauroko, 13.III.81, R.R.F. Lake Hauroko, 11.III.70, 25.XI.70, R.R.F., C.L.W. Tuatapere, 20.X.75, R.R.F. Stewart Island. Garden Mound Track, 28.VI.79, J.E.Carico. Oban 23.II.72, C.L.W. Halfmoon Bay, ex foliage, 22.XI.46, R.R.F. S.W.Stewart Island, Port Adventure, collected at night 21.I.55, R.K. Dell, B.A. Holloway.

Tekelloides flavonotatus (Urquhart)

1890 *Ariamnes flavonotatus* Urquhart. Trans.N.Zeal.Inst. 23:136

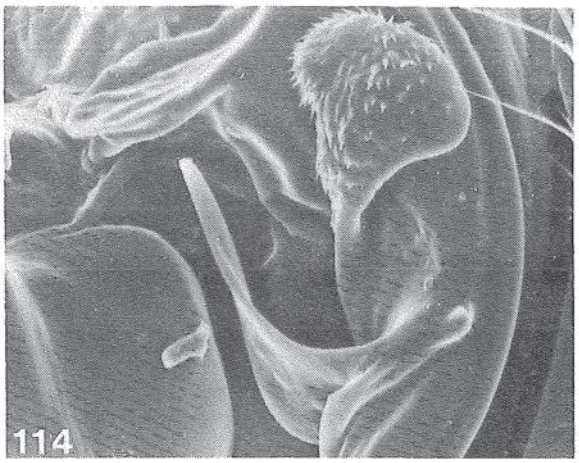
1946 *Rhomphaea flavonotatus*, Parrot. Cant.Mus. 5 (2):70

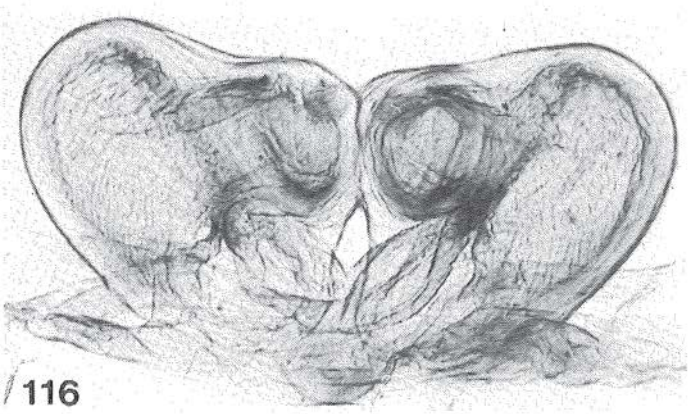
Figs. 34, 35, 56, 104-107

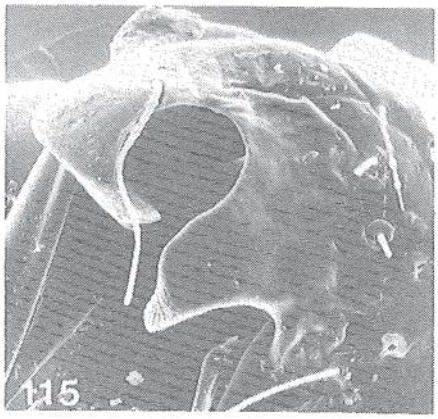
FEMALE

Measurements

Carapace	length	0.90	width	0.65		
Abdomen	length	1.22	width	0.95	height	1.41







Figs. 113-116 *Teemenaarus sylvestris* Davies. 113,114 Male palp showing embolus, median apophysis and parembolic process. 115 Cymbial notch. 116 Female internal genitalia from above.

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	2.52	0.25	2.41	1.75	0.93	7.85
Leg 2	1.45	0.22	1.31	0.93	0.65	4.56
Leg 3	0.80	0.21	0.63	0.55	0.42	2.61
Leg 4	1.15	0.21	0.82	0.65	0.44	3.27
Palp	0.25	0.12	0.15		0.31	0.83

Similar to *australis* in both colouration and general structure, The epigynum is also similar but the median lobe is relatively larger (Fig. 56). The receptacula of the internal genitalia are much smaller while the membraneous portion is larger (Fig. 107).

MALE

Measurements

Carapace	length	0.92	width	0.65		
Abdomen	length	1.22	width	0.96	height	1.41

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	3.32	0.32	3.73	2.61	1.32	11.30
Leg 2	1.75	0.31	1.72	1.25	0.71	5.74
Leg 3	1.00	0.22	0.96	0.65	0.45	3.07
Leg 4	1.31	0.23	1.05	0.82	0.45	3.84
Palp	0.41	0.15	0.05		0.41	1.02

The bulb of the male is more squat than in *australis* and the parembolic flap is more strongly denticulate (Figs. 104, 105). The anterior margin of the retrolateral cymbial notch bears a more prominent tubercle (Fig. 106).

Type Holotype male collected by Urquhart in forest near Stratford (not seen, presumed lost)

Records

North Island. Northland. Manginangina Reserve, near Kaikohe, 30.I.81, R.R.F. Whangarei, Coronation Park, 6.II.81, R.R.F. Waipua Forest, 28.I.81, Mount Mangamuku 7.I.67, R.R.F. Mangamuku 31.I.81, R.R.F. Te Matua, Ngahere, Waipoua S.F. 4.II.75, sweeping under growth in Kauri Forest, A.K.Walker. Auckland. Wattle Bay, Lynfield, Auckland, 1.IV.77, sweeping *Scirpus* swamp, A.K.Walker. Beachlands, Auckland, January 1948, J.Campbell. Kaueranga Valley, Thames, malaise trap, 15-18.I.71, H.A.Oliver. Tikitiki Stream, Horohoro S.F., Mamaku Plateau, 24.VII.76, mosses and litter 76/152, J.S. Dugdale. Rotorua Co., Hongis Track, forest, 5.X.66, K.A.J. Wise. Mamaku Bush, 12.II.52, B.J. Marples., Panekiri, 27.XII.49 R.R.F. Aniwaniwa, 21.X.65, R.W.Hutton, 25.XII.46, R.R.F. Huia, malaise trap, 25.IV.70, H.A. Oliver. Mount Ngamoko track, 2000 ft. on ferns, 9.XII.46, 11.XII.46, R.R.F. Tuna Saddle, Taumaranui, 10.I.67, 6.I.74, R.R.F. Lake Rotopounamu, 13.I.69, R.W. Hutton. Dawson Falls, Mount Egmont, 23.II.67, C.L.W. Mount Egmont, north, 24.II.67, C.L.W. Mount Egmont, 3505 feet, 21.III.69, R.R.F., C.L.W. Wellington. Karori. 10.IV.48, R.R.F. Mount Messenger, 22.III.69, R.R.F. Kapiti Island, May 1947, R.R.F. Waikane ex foliage, 3.I.48, R.R.F. Brooklyn Domain, 6.II.69, C.L.W. Wairarapa. Mount Holdsworth, Tararua Forest Park, camping ground, 20.II.67, C.L.W. Solway showgrounds, Masterton, 28.VIII.47, C.L.W. Mangarcia, Masterton, 1.XI.46, 24.VIII.66, 3.VIII.47, 18.IX.67, 10.I.58, C.L.W. Solway, 26.XI.40, C.L.W. Manawatu Kitchener Park, Feilding, 29.XII.66, R.R.F. Totara Reserve, Pohangina, 20.I.67, R.R.F. Ariti, 9.XII.66, R.R.F.

Numerous specimens from the type locality have been examined. The species is commonly found in forest

throughout the North Island and extends in to the Nelson region of the South Island. Although there is considerable variation in colour and patterning between specimens there is little variation in the structural characters and it seems that only a single species is involved. This species was originally considered new but following from the suggestion by C.L.Wilton that it might be the spider which Urquhart recorded under *Ariamnes* from Stratford a close analysis of his description leaves no doubts that this is so. It would have been an extraordinary ommission if such a common bush spider had been overlooked by Urquhart.

Teemanaarus Davies, 1978.

Figs. 109, 110, 113-116

Teemanaarus Davies, 1978. Symp.zool. Soc.Lond. 42:294.

Type species: Teemenaarus silvestris Davies, 1978.

Diagnosis Cyatholipids with the abdomen triangular in side view and the spinnerets encircled with a sclerotic ring (Figs. 109, 110). Embolus of male bulb with prominent parembolic processes on the inner subdistal surface consisting of a denticulate lobe and a flattened plate (Figs. 113-115). Median apophysis reduced to a small lobe. Ventral surface of the tegulum swollen. Female internal genitalia with the typical thickwalled spherical receptacula each merging with a larger thickwalled receptaculum (Fig. 116). The membraneous ducts found in other genera are not present. Epigynum without a median lobe.

Distribution Australia, mid East Queensland.

Tekellatus Wunderlich 1978

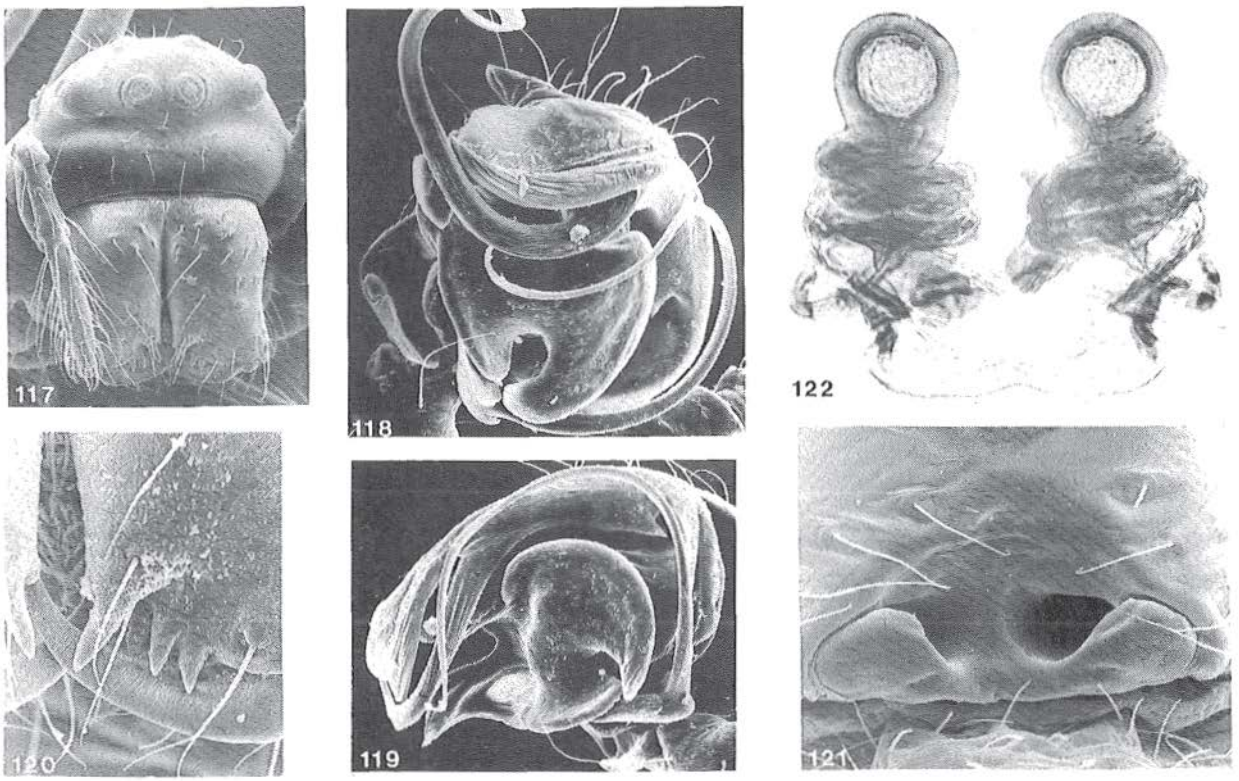
Tekellatus Wunderlich 1978. Zool.Beitr. 24(1):38.

Type species Tekellatus lamingtoniensis Wunderlich 1978.

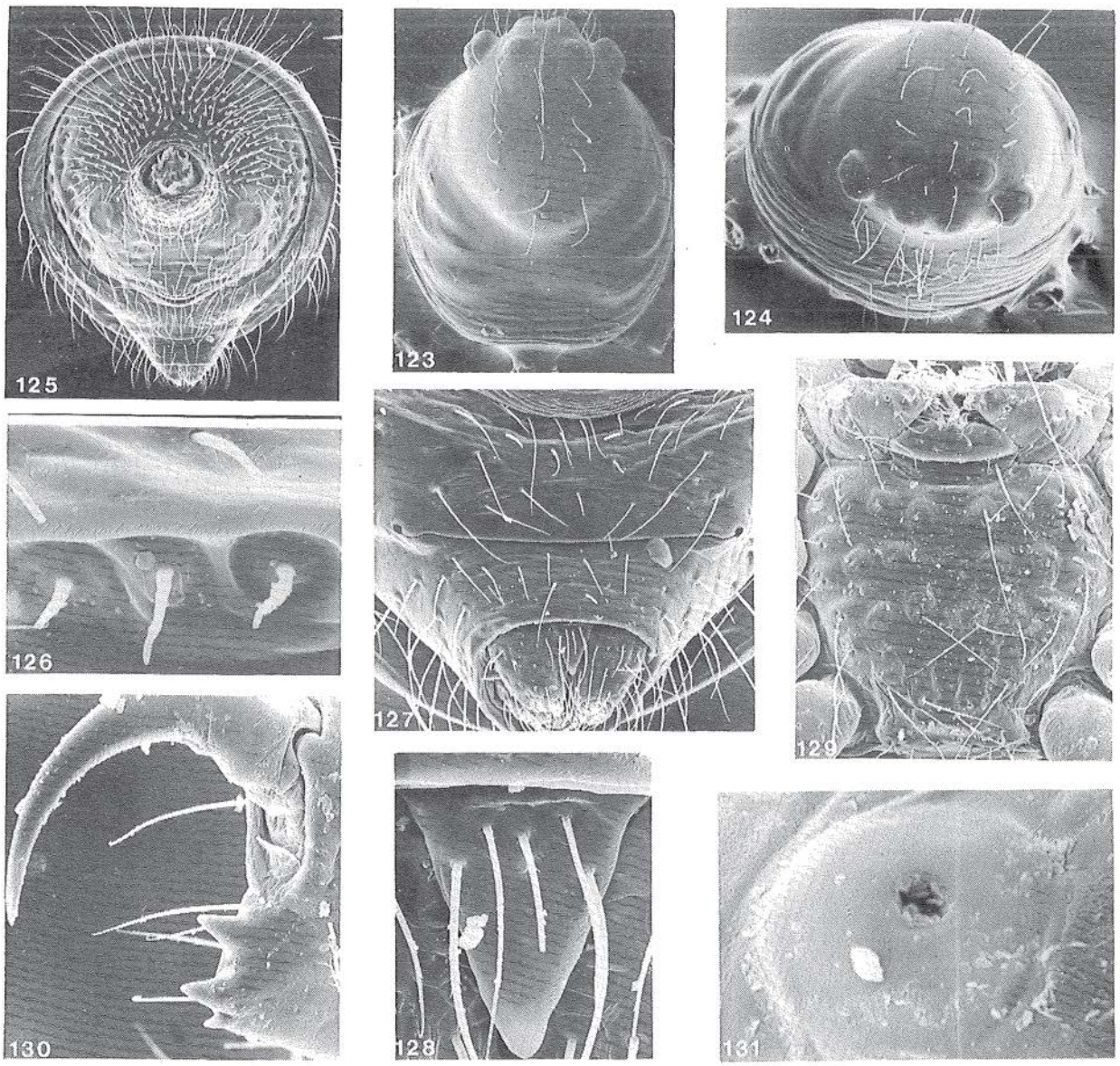
Diagnosis Abdomen ovoid, not raised dorsally as in *Teemenaarus*. Embolus of the male palp without parembolic processes. Median apophysis not present.
Female not known.

Distribution Australia, South East Queensland.

I had made a cursory examination of the male type specimen of *T.lamingtoniensis* prior to description but in the absence of an SEM examination some details are doubtful. The female is not known but nevertheless on the male characters the species does appear to warrant generic separation from *Teemenaarus silvestris*. The shape of the abdomen is a good constant character for other genera and the apparent absence of any parembolic processes in *Tekellatus* must also carry considerable weight. No doubt there is still a lot to be discovered about the Australian fauna and at present it seems advisable to retain both generic names.



Figs. 117-122 *Toddiana daviesae* n.sp. 117 Anterior view carapace and chelicerae female. 118,119 Male palp. 120 Teeth female chelicera. 121 Epigynum. 122 Female internal genitalia from above.



Figs. 123-131 *Matilda australia* n.sp. 123,124 Carapace of male. 125 Ventral view abdomen, male. 126 Epiandrous glands. 127 Postero-ventral surface abdomen of a male showing spiracles, colulus and spinnerets. 128 Colulus. 129 Ventral surface prosoma, male. 130 Chelicerae female. 131 Tarsal organ.

Toddiana n. gen.

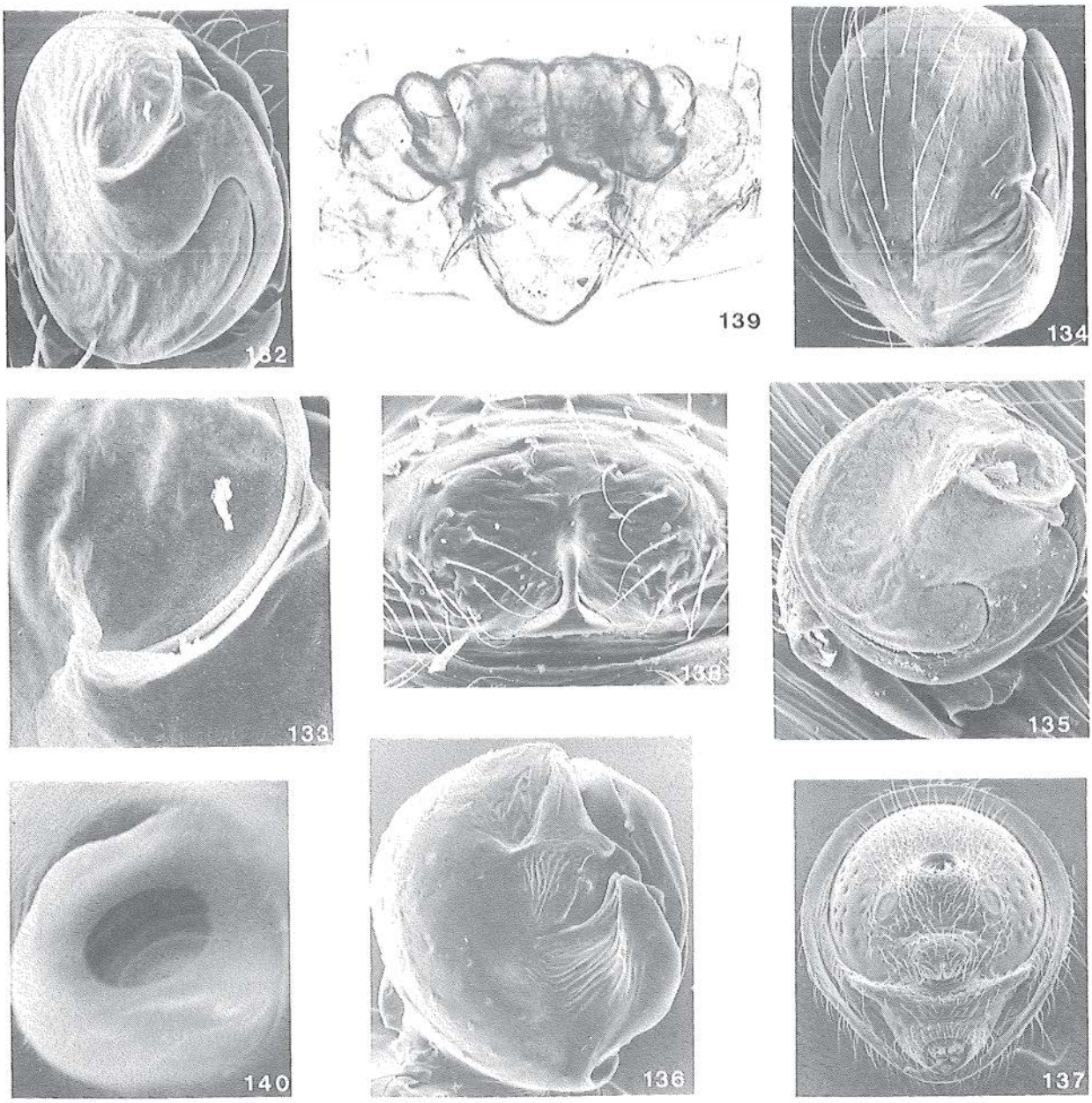
Diagnosis Cyatholipids with a triangular shaped abdomen. Female epigynum lacking a median scape. Male bulb with an elongate spinous parembolic process originating from near the base of the embolus and a massive median apophysis.

Description Carapace only weakly rugose. Head region not strongly differentiated from the thoracic region and not strongly raised. Eight eyes in two rows, subequal. Clypeus high, three times the diameter of an AME. *Chelicerae* dimorphic with the fang of the male much longer than in female. Metatarsi of leg 1 and 2 in the male sinuous with a few denticles along ventral surface. Abdomen triangular in side view, narrower in the male. Epigastric region sclerotised with the sclerotisation extending back to the spinnerets in the male. Female epigynum with lateral lobes but lacking a median scape. Internal genitalia with a single pair of thickwalled receptacula associated with a coiled duct. Embolus strong and associated with a long slender parembolus process.

Type Species Toddiana daviesae n. sp

Distribution Queensland, Australia.

There is little doubt about the validity of *Toddiana* which is clearly distinct from the other two Australian genera *Tekellatus* and *Teemenaarus*. All of the Australian genera are at present monotypic but this is probably a reflection on the limited collections which have been available for study. The striking development of the parembolic process and median apophysis is in itself sufficient to clearly separate the genus from all other cyatholipids.



Figs. 132-140 *Matilda australia* n.sp. 132-134 Male palp from Queensland specimens. 135, 136 Male palp, specimens from type locality. 137 Ventral view abdomen female. 138 Epigynum. 139 1 Female internal genitalia from above. 140. Bothrium.

Toddiana daviesae n. sp.

Figs. 26, 29, 111, 112, 117-122.

FEMALE

Measurements

Carapace	length	0.85	width	0.61		
Abdomen	length	1.15	width	0.90	height	1.15

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	1.21	0.25	0.92	0.75	0.50	3.63
Leg 2	1.00	0.21	0.85	0.65	0.45	3.16
Leg 3	0.62	0.21	0.49	0.35	0.32	1.99
Leg 4	0.89	0.21	0.65	0.55	0.41	2.71
Palp	0.22	0.05	0.10		0.21	0.58

Carapace The surface is smooth. Distinctly longer than wide with the head region only slightly raised.

Colour Carapace and appendages dark brown. *Abdomen* cream with a black pattern as shown in Figs.

Eyes Eight eyes in two rows. From in front the anterior row is straight and the posterior row gently procurved (Fig. 117). Ratio of AME:ALE:PME:PLE= 4:4:3:3. AME separated by 3/4 of the diameter of an AME. The PME are separated from each other and from the AME by 7/4. The AME are separated from the ALE by 7/4 and the PME are separated from the PLE by 9/4 of the diameter of an AME. The clypeus is vertical, slightly swollen and equal in height to three times the diameter of an AME. Maxillae and labium typical for the family.

Chelicerae Vertical, slightly swollen on the anterior proximlal surface. The fang is short, extending across the distal surface: There are three teeth on each margin Figs. 117).

Abdomen Triangular in side view, as high as long (Figs. 111, 112). Six spinnerets and a triangular colulus not encircled by a sclerotic ring. Epigynum as in Fig. 121. The internal genitalia are shown in Fig. 122.

Legs Metatarsi not sinuous and denticles absent. The tarsal organ is a flattened dome with a small erture (Fig. 29). Bothria with small lateral ridges (Fig. 26).

MALE

Measurements

Carapace	length	0.75	width	0.55	
Abdomen	length	1.00	width	0.62	

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	1.05	0.22	1.00	0.75	0.51	3.53
Leg 2	0.5	0.22	0.92	0.62	0.42	3.13
Leg 3	0.52	0.15	0.35	0.35	0.34	1.71
Leg 4	0.73	0.21	0.55	0.52	0.35	2.36
Palp	0.25	0.07	0.11		0.31	0.74

Similar to the female in most characters. The abdomen is more slender when viewed from the side and the cheliceral fang is longer and curved. The palp is shown in Figs. 118, 119. The embolus is stout and curved and a more slender spinous process parallels the embolus which is probably a parembolic process. The median apophysis is very large.

Types Holotype male, allotype female. Australia, mid east Queensland, Bulburin State Forest, 19-20 March, 1975, fine sheetweb in foliage; spider in centre beneath, R. Kohout, V. Davies (Queensland Museum, Brisbane).

The new genus and species are named after Dr. Valerie Todd Davies who first discovered the species. According to Davies (1978) the spider constructs a large filmy sheetweb in the shrub layer in contrast to *Teeemenaarus silvestris* Davies which generally constructs webs on treetrunks.

Matilda n. gen.

Diagnosis Small anapid-like cyatholipids, with the abdomen heavily sclerotised and completely covered with a scute.

Description Carapace smooth with the head region distinctly raised and rounded (Figs.108, 123). Eight eyes in two rows with the AME overhanging the clypeus (Fig. 124). Clypeus high. Chelicerae with the teeth grouped distally (Fig.130). Abdomen ovoid enclosed in three scutes. One dorsal and two others, one encircling the spinnerets and the other the petiolus (Fig. 108). Six spinnerets in a compact bunch with a triangular colulus (Fig. 128). Legs not elongate as in the other genera and subequal. Tarsal organ a smooth dome with a very small aperture (Fig. 131). Bothria with the posterior hood reduced to two small marginal mounds (Fig. 140). Female epigynum weakly developed with a median ridge but no scape (Fig. 138). Internal genitalia with a median pair of thickwalled receptacula and convoluted lateral membraneous ducts (Fig. 139). Embolus curved around the bulb; without parembolic processes. Median apophysis not present but anterior median surface of the tegulum with a low ridge which acts as a conductor for the tip of the embolus (Figs. 132, 133).

Respiratory system typical but the lamellae of the booklungs narrow and elongate and reduced to five on each side.

Type Species Matilda australia n.sp

Distribution Australia: New South Wales, S.W. Queensland.

These small atypical cyatholipids can easily be mistaken for anapids at first glance but they have all of the typical cyatholipid characters including the unique form of the tracheal System. The single species known was collected from leaf litter on the forest floor and in this way contrast strongly with the habitat preferences known for other genera. The relatively stout and subequal legs suggest a different preycatching strategy.

Matilda australia

Figs. 108,123-140.

MALE

Measurements

Carapace	length	0.78	width	0.68	
Abdomen	length	1.29	width	1.09	

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.85	0.24	0.66	0.51	0.44	2.70
Leg 2	0.80	0.24	0.63	0.43	0.46	2.56
Leg 3	0.68	0.22	0.49	0.39	0.41	2.19
Leg 4	0.85	0.22	0.65	0.46	0.43	2.61
Palp	0.29	0.12	0.12		0.34	0.87

Colour Carapace dark reddish brown with two dark lines extending back from the eyes to an open black patch on the midsurface. Ventral surface and appendages uniform dark brown. Abdominal scutes dark blackish brown while the cuticle between the scutes is cream.

Carapace Smooth, thoracic region without hairs but head with three longitudinal rows behind the eyes and a group on the clypeus. The head region is distinctly raised above the thorax but not as strongly as in typical anapids (Figs. 108, 123,124). There is no foveal depression.

Sternum As wide as long and broadly obtuse posteriorly (Fig. 129). The surface is sparsely tuberculate. *Maxillae* Subtriangular and directed across the labium but not meeting in the midline. The labium is as wide as long and strongly rebordered.

Eyes From in front the anterior row is straight and the posterior row slightly procurved. Ratio of AME:ALE:PME: PLE= 8:7:7:7. The lateral eyes and the AME are placed on low mounds. PME separated from each other by 5/8 and from the PLE by 7/8 of the diameter of an AME. PME separated from each other and the PLE by a distance equal to this diameter. Lateral eyes contiguous. Clypeus high and vertical, equal to three times the diameter of an AME.

Chelicerae Vertical with a short fang which rests on three teeth which are situated on a distal projection (Fig. 130). There is no furrow.

Abdomen The epigastric scute encircles the petiolus and extends an equal distance over the dorsal surface of the abdomen to abut onto an extensive dorsal scute which extends back to the spinnerets. The spinnerets are encircled by a scute which extends forward on the ventral surface to near the epigastric furrow (Fig. 125). There are three epiandrous spigots arising from shallow pits behind the anterior margin of the epigastrium (Fig. 126). The spiracles are situated on the ventral midsurface of the mammillary plate and interconnected by a deep transverse furrow (Fig. 127). Six spinnerets in a compact group with a large triangular colulus furnished with five hairs arranged 3:2 (Fig. 128). The epigastric plate is coarsely punctate laterally but otherwise the scutes are smooth. All of the scutes are furnished with long erect smooth or slightly serrate hairs.

Legs 1432 as in other cyatholipids but in contrast to all other cyatholipids the anterior pair are only slightly longer. Clothed with weakly serrate hairs. Two or three trichobothria on each tibia and one on each metatarsus. The bothria are as in Fig. 140. The posterior hood is represented by little more than low lateral ridges. The tarsal organ is a low smooth dome with a very small aperture (Fig. 131). Denticles are not present on the tibiae.

Palp Cymbium spoon-shaped with a deep but narrow retrolateral notch which is flanked basally by a pointed projection and distally by a broadly clavate plate (Figs. 135, 136). The bulb is flattened below and encircled by a strong spiniform embolus which lacks any parembolic processes. The embolus curved back from the anterior margin down to the base of the embolus where the tip rests in a depression limited by a shallow ridge (Figs. 132-134). There is no median apophysis.

FEMALE

Measurements

Carapace	length	0.80	width	0.46
Abdomen	length	1.45	width	1.35

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.85	0.20	0.71	0.51	0.49	2.66
Leg 2	0.82	0.19	0.63	0.48	0.46	2.58
Leg 3	0.80	0.19	0.49	0.39	0.43	2.30
Leg 4	0.85	0.20	0.71	0.49	0.46	2.71
Palp	0.22	0.09	0.17		0.22	0.70

In general appearance and structure the female is similar to the male but the abdomen is relatively larger. The epigynum is represented by a raised oval area with a short median ridge which is expanded posteriorly (Figs. 137, 138). The internal genitalia consist of a contiguous pair of thickwalled receptacula with a coiled lateral membranous duct (Fig. 139).

Types Holotype male, allotype female. Australia, New South Wales, Warrah, from forest floor litter, February 8, 1972, A.D. Blest (Queensland Museum, Brisbane).